GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 10:40:03 ; Search time 15.22 Seconds
(without alignments)
662.955 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 182106 seqs, 63460219 residues

Total number of hits satisfying chosen parameters: 182106

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_65:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	810	99.0	160	2	S05376	major pollen aller
2	790	96.6	160	2	G55699	major pollen aller
3	785	96.0	160	2	D55699	major pollen aller
4	784	95.8	160	2	E55699	major pollen aller
5	782	95.6	160	2	C55699	major pollen aller
6	781	95.5	160	2	F55699	major pollen aller
7	775	94.7	160	2	I55699	major pollen aller
8	735	89.9	160	2	A57427	major pollen aller
9	729	89.1	160	2	A55699	major pollen aller
10	725	88.6	160	2	H55699	major pollen aller
11	717	87.7	160	2	B55699	major pollen aller
12	702	85.8	160	2	S47250	gene 1-Sc1 protein
13	698	85.3	159	2	S47251	gene 1 Sc2 protein
14	616	75.3	160	2	S30054	major allergen Cor
15	616	75.3	160	2	S30055	major allergen Cor
16	610	74.6	160	2	S30053	major allergen Cor
17	607	74.2	160	2	S47249	gene 1-Sc3 protein
18	603	73.7	160	2	S30056	major allergen Cor
19	540	66.0	160	2	T17005	major allergen Mal
20	529	64.7	160	2	T17006	major allergen Mal
21	525	64.2	160	2	T17007	major allergen Mal
22	500.5	61.2	159	2	T17004	major allergen Mal
23	460.5	56.3	159	2	JC4276	major allergen Mal
24	442.5	54.1	153	2	S51119	MalD1 protein - ap
25	415.5	50.8	157	2	T09659	pathogenesis-relat
26	410.5	50.2	157	2	T09526	stress response ge
27	381	46.6	158	2	T06527	pathogenesis-relat
28	377	46.1	158	2	S42650	pathogenesis-relat
29	376	46.0	158	2	S20518	hypothetical prote
30	369.5	45.2	159	2	T06768	disease resistance
31	366	44.7	158	2	S47140	pathogenesis-relat
32	365	44.6	156	1	SNFB1	pathogenesis-relat
33	362	44.3	155	2	S52664	pathogenesis-relat
34	362	44.3	158	2	S20517	hypothetical prote
35	357.5	43.7	155	1	SNFB2	pathogenesis-relat
36	357.5	43.7	155	2	T11670	pathogenesis relat
37	337.5	41.3	155	2	S35162	STH-21 protein - p
38	337.5	41.3	155	2	S35161	STH-2 protein - po
39	334.5	40.9	158	2	S12568	pathogenesis-relat
40	327.5	40.0	157	2	S42649	pathogenesis-relat
41	312	38.1	178	2	T07403	TSI-1 protein - to
42	311	38.0	155	2	S04552	pathogenesis-relat
43	309.5	37.8	154	2	S63984	major allergen Api
44	307	37.5	155	2	S04553	pathogenesis-relat
45	297	36.3	155	2	T14918	pathogenesis-relat

ALIGNMENTS

RESULT 1
S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 04-Feb-2000
C;Accession: S05376; JC4834; B53288
R;Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; S
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen BetvI, is highly homol
A;Reference number: S05376; MUID:90005395
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X15877; NID:g17937; PIDN:CAA33887.1; PID:g17938
R;Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the mai
A;Reference number: JC4834; MUID:96254050
A;Accession: JC4834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
R;Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial iden
s) Car b I and oak (Quercus alba) Que a I pollens.
A;Reference number: A53288; MUID:92072607
A;Accession: B53288
A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39,'XX',42-44 <IPS>
A;Cross-references: PID:g239734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBIP:68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 99.0%; Score 810; DB 2; Length 160;
Best Local Similarity 98.7%; Pred. No. 1.7e-64;
Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

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Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 2
G55699
major pollen allergen Bet v 1j - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: G55699; S41902
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: G55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77271; NID:g452739; PIDN:CAA54487.1; PID:g452740
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

Query Match 96.6%; Score 790; DB 2; Length 160;
Best Local Similarity 95.0%; Pred. No. 1e-62;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

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Db     62 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: D55699; S41899
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77267; NID:g452733; PIDN:CAA54483.1; PID:g452734
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

Query Match 96.0%; Score 785; DB 2; Length 160;
Best Local Similarity 94.3%; Pred. No. 2.8e-62;
Matches 150; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

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Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db     62 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 4
E55699
major pollen allergen Bet v 1f/i - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: E55699; S41905; S41900
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: E55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77268; NID:g452735; PIDN:CAA54484.1; PID:g452736
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberl
submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41905
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77274; NID:g452745; PIDN:CAA54490.1; PID:g452746
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

Query Match 95.8%; Score 784; DB 2; Length 160;
Best Local Similarity 94.3%; Pred. No. 3.4e-62;
Matches 150; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

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Db      2 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db     62 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 5
C55699
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: C55699; S41901; S41898
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77266; NID:g452731; PIDN:CAA54482.1; PID:g452732
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberl

submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41901
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77270; NID:g452737; PIDN:CAA54486.1; PID:g452738
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 95.6%; Score 782; DB 2; Length 160;
Best Local Similarity 94.3%; Pred. No. 5.1e-62;
Matches 150; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

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Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 6
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: F55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77269; NID:g452727; PIDN:CAA54485.1; PID:g452728
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 95.5%; Score 781; DB 2; Length 160;
Best Local Similarity 93.7%; Pred. No. 6.3e-62;
Matches 149; Conservative 6; Mismatches 4; Indels 0; Gaps 0;

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Db       2 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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RESULT 7
I55699
major pollen allergen Bet v 1l - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: I55699; S41904
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid ch
A;Reference number: A55699; MUID:95155322
A;Accession: I55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77273; NID:g452743; PIDN:CAA54489.1; PID:g452744
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1l #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 94.7%; Score 775; DB 2; Length 160;
Best Local Similarity 93.1%; Pred. No. 2.1e-61;
Matches 148; Conservative 5; Mismatches 6; Indels 0; Gaps 0;

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Db       2 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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RESULT 8
A57427
major pollen allergen Bet v 1m/n - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A57427; S49450
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: A57427
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: GB:X81972; NID:g807868; PIDN:CAA57497.1; PID:g551640
R;Engel, E.; Kraft, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.
submitted to the EMBL Data Library, October 1994
A;Description: Isoforms of BETV1, the major birch pollen allergen, analyzed by liquid
A;Reference number: S49450
A;Accession: S49450
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <ENG>
A;Cross-references: EMBL:X82028; NID:g807869; PIDN:CAA57550.1; PID:g558561
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1m/n #status experimental <MAT>

Query Match 89.9%; Score 735; DB 2; Length 160;
Best Local Similarity 88.7%; Pred. No. 7.2e-58;
Matches 141; Conservative 8; Mismatches 10; Indels 0; Gaps 0;

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Db     122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT   9
A55699
major pollen allergen Bet v 1b - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A55699; S41401
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: A55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77200; NID:g450884; PIDN:CAA54421.1; PID:g450885
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1b #status experimental <MAT>


  Query Match             89.1%;  Score 729;  DB 2;  Length 160;
  Best Local Similarity   88.1%;  Pred. No. 2.4e-57;
  Matches  140;  Conservative    8;  Mismatches   11;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db      2 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  10
H55699
major pollen allergen Bet v 1k - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: H55699; S41903
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: H55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77272; NID:g458478; PIDN:CAA54488.1; PID:g452742
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>


  Query Match             88.6%;  Score 725;  DB 2;  Length 160;
  Best Local Similarity   87.4%;  Pred. No. 5.5e-57;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db      2 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  11
B55699
major pollen allergen Bet v 1c - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: B55699; S41897
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: B55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77265; NID:g452729; PIDN:CAA54481.1; PID:g452730
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1c #status experimental <MAT>


  Query Match             87.7%;  Score 717;  DB 2;  Length 160;
  Best Local Similarity   86.8%;  Pred. No. 2.8e-56;
  Matches  138;  Conservative    9;  Mismatches   12;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db      2 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||| |:||| :|| || || ||||||||||||||||
Db    122 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  12
S47250
gene 1-Scl protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47250
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47250
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77599; NID:g534909; PIDN:CAA54694.1; PID:g534910
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


  Query Match             85.8%;  Score 702;  DB 2;  Length 160;
  Best Local Similarity   84.3%;  Pred. No. 5.8e-55;
  Matches  134;  Conservative    9;  Mismatches   16;  Indels    0;  Gaps    0;
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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||:|| |||||||||||||||||||||||| |||||| :| |||| |||||||||||:|||
Db      2 GVFDYEGETTSVIPAARLFKAFILDGDNLIPKVAPQTVSCVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||:||||||| |||:|||||| :||||||| ||||||  | ||||||||||
Db     62 GSPFKYVKERVDEVDHVNFKYSYSVIEGGAVGDTLEKICNEIKIVPAPGGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||:||||:|||||  | | ||||||||||||||
Db    122 HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 160


RESULT  13
S47251
gene 1 Sc2 protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47251
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47251
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-159 <SWO>
A;Cross-references: EMBL:X77600; NID:g534899; PIDN:CAA54695.1; PID:g534900
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


  Query Match             85.3%;  Score 698;  DB 2;  Length 159;
  Best Local Similarity   84.3%;  Pred. No. 1.3e-54;
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    121 HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 159


RESULT  14
S30054
major allergen Cor a I/6 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30054
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M.;
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show
A;Reference number: S30053; MUID:93185652
A;Accession: S30054
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X71000; NID:g22689; PIDN:CAA50328.1; PID:g22690
C;Genetics:
A;Gene: Cor a I/6
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.3%;  Score 616;  DB 2;  Length 160;
  Best Local Similarity   72.3%;  Pred. No. 2.2e-47;
  Matches  115;  Conservative   22;  Mismatches   22;  Indels    0;  Gaps    0;

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          |||||| || |||||||||||:::|||| | ||||||||:||||: ||||||||| |:| |
Db      2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:|||||:|:|||| :|| |||: :|:|||| | |||||||:|:
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160


RESULT  15
S30055
major allergen Cor a I/11 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30055; S35507
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, sh
A;Reference number: S30053; MUID:93185652
A;Accession: S30055
A;Molecule type: mRNA
A;Residues: 1-160 <BRE1>
A;Cross-references: EMBL:X70997
R;Breiteneder, H.
submitted to the EMBL Data Library, February 1993
A;Reference number: S35507
A;Accession: S35507
A;Molecule type: mRNA
A;Residues: 1-133,'I',135-160 <BRE2>
A;Cross-references: EMBL:X70997; NID:g22683; PIDN:CAA50325.1; PID:g22684
C;Genetics:
A;Gene: Cor a I/1
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.3%;  Score 616;  DB 2;  Length 160;
  Best Local Similarity   72.3%;  Pred. No. 2.2e-47;
  Matches  115;  Conservative   22;  Mismatches   22;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Db      2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Search completed: December 11, 2000, 10:41:59
Job time: 116 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 171.63 Seconds
(without alignments)
15.528 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 164575 seqs, 16761186 residues

Total number of hits satisfying chosen parameters: 164575

Minimum DB seq length: 0
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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1	815	99.5	160	1	US-07-847-010-23	Sequence 23, Appl
2	683	83.4	160	1	US-07-847-010-3	Sequence 3, Appli
3	621	75.8	160	1	US-07-847-010-14	Sequence 14, Appl
4	621	75.8	160	1	US-07-847-010-17	Sequence 17, Appl
5	615	75.1	160	1	US-07-847-010-11	Sequence 11, Appl
6	601	73.4	160	1	US-07-847-010-20	Sequence 20, Appl
7	377	46.0	158	5	5312912-2	Patent No. 5312912
8	277.5	33.9	154	1	US-08-363-010-1	Sequence 1, Appli
9	275.5	33.6	154	2	US-08-911-434A-4	Sequence 4, Appli
10	236	28.8	158	3	US-08-199-219-6	Sequence 6, Appli
11	78	9.5	1442	2	US-08-316-650-12	Sequence 12, Appl
12	78	9.5	1442	4	PCT-US95-02251-12	Sequence 12, Appl
13	77	9.4	669	2	US-08-357-533A-8	Sequence 8, Appli
14	77	9.4	669	2	US-08-459-009-8	Sequence 8, Appli
15	77	9.4	669	3	US-08-459-951-8	Sequence 8, Appli
16	75.5	9.2	3135	1	US-08-323-170B-2	Sequence 2, Appli
17	72	8.8	1577	2	US-08-793-824-2	Sequence 2, Appli
18	71.5	8.7	341	2	US-08-538-711A-8	Sequence 8, Appli
19	71.5	8.7	353	2	US-08-538-711A-7	Sequence 7, Appli
20	70.5	8.6	522	5	RE34606-6	Patent No. RE34,60
21	70	8.5	1008	2	US-08-680-326-30	Sequence 30, Appl
22	69	8.4	159	3	US-09-142-514-4	Sequence 4, Appli
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24	68.5	8.4	837	1	US-08-426-627-23	Sequence 23, Appl
25	68	8.3	436	3	US-08-669-378-2	Sequence 2, Appli
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27	68	8.3	436	3	US-08-669-378-6	Sequence 6, Appli
28	68	8.3	436	3	US-08-669-378-10	Sequence 10, Appl
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32	67	8.2	780	1	US-08-485-621-2	Sequence 2, Appli
33	67	8.2	780	2	US-08-973-831-2	Sequence 2, Appli
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35	66.5	8.1	866	1	US-08-386-727-8	Sequence 8, Appli
36	66.5	8.1	866	2	US-08-600-452A-8	Sequence 8, Appli
37	66.5	8.1	906	1	US-08-486-270-2	Sequence 2, Appli
38	66.5	8.1	906	3	US-08-367-264-2	Sequence 2, Appli
39	66	8.1	310	1	US-08-129-456A-37	Sequence 37, Appl
40	66	8.1	420	3	US-09-329-418-8	Sequence 8, Appli
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42	66	8.1	518	3	US-09-329-418-4	Sequence 4, Appli
43	66	8.1	518	3	US-09-329-418-9	Sequence 9, Appli
44	66	8.1	1183	2	US-08-447-031A-2	Sequence 2, Appli
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ALIGNMENTS

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RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  23:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  birch (Betula sp.)
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;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-23

  Query Match             99.5%;  Score 815;  DB 1;  Length 160;
  Best Local Similarity   99.4%;  Pred. No. 1.8e-83;
  Matches  158;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   2
US-07-847-010-3
; Sequence 3, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
```

```
US-07-847-010-3

  Query Match             83.4%;  Score 683;  DB 1;  Length 160;
  Best Local Similarity   81.1%;  Pred. No. 9.5e-69;
  Matches  129;  Conservative   12;  Mismatches   18;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| || |||||||||||||||| | |||||:|:|||||||||||||||||||:|||
Db       2 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||||:
Db      62 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||: |||:|  ||    ||:|||||||||||||||
Db     122 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 160


RESULT   3
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
```

US-07-847-010-14

Query Match 75.8%; Score 621; DB 1; Length 160;
Best Local Similarity 73.0%; Pred. No. 7.9e-62;
Matches 116; Conservative 22; Mismatches 21; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||  || |||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:|||||:|:||||  :|| |||: :|:|||| | ||||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||::| :||| | ||||||:|||||  ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

```
RESULT   4
US-07-847-010-17
; Sequence 17, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  17:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
```

US-07-847-010-17

Query Match 75.8%; Score 621; DB 1; Length 160;
Best Local Similarity 73.0%; Pred. No. 7.9e-62;
Matches 116; Conservative 22; Mismatches 21; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| ||||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||  :|| |||: :|:|||| | ||||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: |||:| :||| | ||||||:|||||  ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

```
RESULT   5
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
```

US-07-847-010-11

Query Match 75.1%; Score 615; DB 1; Length 160;
Best Local Similarity 72.3%; Pred. No. 3.7e-61;
Matches 115; Conservative 22; Mismatches 22; Indels 0; Gaps 0;

```
Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||  || |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | ||||||: ||:::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 6
US-07-847-010-20
; Sequence 20, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 20:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-20

Query Match 73.4%; Score 601; DB 1; Length 160;
Best Local Similarity 71.1%; Pred. No. 1.3e-59;
Matches 113; Conservative 22; Mismatches 24; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| || ||| ||||||:::|||| | ||||||||:||||: |||||||||| |:| |
Db      2 GVFNYEVETPSVISAARLFKSYVLDGDKLIPKVAPQAITSVENVGGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||||:|:|||| :|| |||: :|:|||| | ||| ||||:|:
Db     62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSTLKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||:::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 7
5312912-2
;Patent No. 5312912
; APPLICANT: HADWIGER, LEE A.;CHIANG, CHIN C.;HOROVITZ,
;DANIEL A.
; TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER
;INDUCIBLE TRAITS IN PLANTS
; NUMBER OF SEQUENCES: 9
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/393,301
; FILING DATE: 13-JUN-1989
;SEQ ID NO:2:
; LENGTH: 158
5312912-2

Query Match 46.0%; Score 377; DB 5; Length 158;
Best Local Similarity 50.3%; Pred. No. 1.3e-34;
Matches 80; Conservative 26; Mismatches 51; Indels 2; Gaps 2;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
            ||||:| | ||::  | | || : | | | |||   || |:| :||||||||||::| |
Db      2 GVFNFEEEATSIVAPATLHKALVTDADILTPKVI-DAIKSIEIVEGNGGPGTIKKLTFVE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
              |||  :|: ||  |:  |||:: |  : ||:|||| | |: | |:|||| |:| ||
Db     61 DGETKYVLHKVELVDDANWANNYSIVGGVGLPDTVEKISFEAKLSAGPNGGSIAKLSVKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
            :||||     |::|  |  || : :|:| | :|: | ||
Db    121 YTKGDAIPSEEEIKNGKAKGEGIFKALEGYCVANPD-YN 158
```

RESULT 8
US-08-363-010-1
; Sequence 1, Application US/08363010
; Patent No. 5512484
; GENERAL INFORMATION:
; APPLICANT: Yamamoto, Mika
; APPLICANT: Oheda, Kenji
; TITLE OF INVENTION: CARROT 16 KD PROTEIN, GENE CODING FOR
; TITLE OF INVENTION: SAID PROTEIN AND PLASMID CONTAINING SAID GENE
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
; STREET: 8110 Gatehouse Road, Suite 500 East
; CITY: Falls Church
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22042
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

```
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/363,010
;      FILING DATE:  23-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Svensson, Leonard R.
;      REGISTRATION NUMBER:  30,330
;      REFERENCE/DOCKET NUMBER:  20-3628P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 205-8000
;      TELEFAX:  (703) 205-8050
;      TELEX:  248345
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  154 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Daucus carota
;      STRAIN:  Kuroda Gosun
US-08-363-010-1


  Query Match             33.9%;  Score 277.5;  DB 1;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 1.5e-23;
  Matches   57;  Conservative   33;  Mismatches   63;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |  ::  | || : | ::|   :|| | : || || |  ||: ::|:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  | | |:     |: :||:|  : : :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLEFIESIETHMVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT   9
US-08-911-434A-4
; Sequence 4, Application US/08911434A
; Patent No. 5959176
;  GENERAL INFORMATION:
;    APPLICANT:  TORIKAI, Satomi
;    APPLICANT:  OEDA, Kenji
;    TITLE OF INVENTION:  PLANT PROMOTER AND UTILIZATION THEREOF
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BIRCH, STEWART, KOLASCH & BIRCH, LLP
;      STREET:  P.O. BOX 747
;      CITY:  FALLS CHURCH
;      STATE:  VIRGINIA
;      COUNTRY:  UNITED STATES OF AMERICA
;      ZIP:  22040
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/911,434A
;      FILING DATE:  12-AUG-1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Stewart, Raymond C.
;      REGISTRATION NUMBER:  21,066
;      REFERENCE/DOCKET NUMBER:  2185-0199P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703)205-8000
;      TELEFAX:  (703)205-8050
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;     LENGTH: 154 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-911-434A-4


  Query Match             33.6%;  Score 275.5;  DB 2;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 2.6e-23;
  Matches   57;  Conservative   32;  Mismatches   64;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |  ::  | |:| : | ::|   :|| | : || || |  ||: ::|:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  |. | |:     |: :||:|  :   :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLGFIESIETHLVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT  10
US-08-199-219-6
; Sequence 6, Application US/08199219
; Patent No. 6031151
; Patent No. 6031151 5698768
;  GENERAL INFORMATION:
;    APPLICANT:  DRAPER, JOHN
;    TITLE OF INVENTION:  CALLUS-SPECIFIC PROMOTERS
;    NUMBER OF SEQUENCES:  8
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  HALE AND DORR
;      STREET:  1455 PENNSYLVANIA AVENUE, N.W.
;      CITY:  WASHINGTON
;      STATE:  D.C.
;      ZIP:  20004
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/199,219
;      FILING DATE:  01 MARCH 1994
;    PRIOR APPLICATION DATA:
;    PRIOR APPLICATION DATA:  APPLICATION NUMBER:  PCT/GB92/01602
;    PRIOR APPLICATION DATA:  FILING DATE:  02 SEPTEMBER 1992
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  158 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-199-219-6


  Query Match             28.8%;  Score 236;  DB 3;  Length 158;
  Best Local Similarity   35.9%;  Pred. No. 6.9e-19;
  Matches   56;  Conservative   30;  Mismatches   66;  Indels    4;  Gaps    3;

Qy       4 NYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE-GL 62
           ::  |    : | |:||| :||  || ||: |  |:    : |:|  |||::|      :
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Db       5 SWSHEVAVNVAAGRMFKAAMLDWHNLGPKIVPDFIAGGSVVSGDGSVGTIREIKINNPAI 64

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKYHT 122
           || |||:|:| |||  |:   :::||| :|   |  :   |   : :|| ::|::  |
Db      65 PFSYVKERLDFVDHDKFEVKQTLVEGGGLGKMFECATTHFKFEPSSNGGCLVKVTASY-- 122

Qy     123 KGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAY 158
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Db     123 KILPGVADESAKA-KEGITNHMKATEAYLLANPTAY 157


RESULT  11
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
;  GENERAL INFORMATION:
;    APPLICANT:  Bonadio, Jeffrey
;    APPLICANT:  Roessler, Blake J.
;    APPLICANT:  Goldstein, Steven A.
;    APPLICANT:  Lin, Wushan
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS
;    TITLE OF INVENTION:  FOR STIMULATING BONE CELLS
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  30-SEP-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC:008
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-316-650-12


  Query Match             9.5%;  Score 78;  DB 2;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 7.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENIEGNGGPGTIKKISFPEGL------ 62
           || |  |                | |          |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
             | :|:  | || | |  ::: |        ||: ::|:|: : :|||
Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
           ||: :    ||: :   |         |  : | |||
Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


RESULT  12
PCT-US95-02251-12
; Sequence 12, Application PC/TUS9502251
;  GENERAL INFORMATION:
;    APPLICANT:
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS FOR STIMULATING BONE
;    TITLE OF INVENTION:  CELLS
;    NUMBER OF SEQUENCES:  18
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  United States of America
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS/ASCII
;      SOFTWARE:  PatentIn Release #1.0, Version
;      SOFTWARE:  #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US95/02251
;      FILING DATE:  CONCURRENTLY HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  18-FEB-1994
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC009P--
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
PCT-US95-02251-12


  Query Match             9.5%;  Score 78;  DB 4;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 7.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENIEGNGGPGTIKKISFPEGL------ 62
           || |  |                | |          |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
             | :|:  | || | |  ::: |        ||: ::|:|: : :|||
Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
           ||: :    ||: :   |         |  : | |||
Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


RESULT  13
US-08-357-533A-8
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; Sequence 8, Application US/08357533A
; Patent No. 5831050
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/357,533A
;      FILING DATE:  16-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-357-533A-8


  Query Match             9.4%;  Score 77;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 3.2;
  Matches   39;  Conservative   24;  Mismatches   54;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
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Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |          |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  14
US-08-459-009-8
; Sequence 8, Application US/08459009
; Patent No. 5861479
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,009
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/357,533
;      FILING DATE:  16-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-009-8


  Query Match             9.4%;  Score 77;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 3.2;
  Matches   39;  Conservative   24;  Mismatches   54;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
           || : :|   :       ||   :  |:|||  |  |::    ||         ||| |:
Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |          |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  15
US-08-459-951-8
; Sequence 8, Application US/08459951
; Patent No. 6093547
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
```

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;       ADDRESSEE:  INC
;       STREET:  45 SOUTH STREET
;       CITY:  HOPKINTON
;       STATE:  MA
;       COUNTRY:  USA
;       ZIP:  01748
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/459,951
;       FILING DATE:
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/357,533
;       FILING DATE:  16-DEC-1994
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  KELLY, ROBIN D
;       REGISTRATION NUMBER:  34,637
;       REFERENCE/DOCKET NUMBER:  CRP-073FW
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (508)-435-9001
;       TELEFAX:  (508)-435-0992
;   INFORMATION FOR SEQ ID NO:  8:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  669 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     FEATURE:
;       NAME/KEY:  Protein
;       LOCATION:  1..669
;       OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-951-8


  Query Match             9.4%;  Score 77;  DB 3;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 3.2;
  Matches   39;  Conservative   24;  Mismatches   54;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
           || : :|   :       ||   :  |:|||  |  |::    ||         ||| |:
Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:          |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |          |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


Search completed: December 11, 2000, 09:50:02
Job time: 499 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 09:47:12 ; Search time 277.19 Seconds
(without alignments)
18.326 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 87993 seqs, 31947931 residues

Total number of hits satisfying chosen parameters: 87993

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	815	99.5	159	1	BV1A_BETVE	P15494 betula verr
2	795	97.1	159	1	BV1J_BETVE	P43183 betula verr
3	790	96.5	159	1	BV1E_BETVE	P43178 betula verr
4	789	96.3	159	1	BV1F_BETVE	P43179 betula verr
5	787	96.1	159	1	BV1D_BETVE	P43177 betula verr
6	786	96.0	159	1	BV1G_BETVE	P43180 betula verr
7	780	95.2	159	1	BV1L_BETVE	P43185 betula verr
8	740	90.4	159	1	BV1M_BETVE	P43186 betula verr
9	734	89.6	159	1	BV1B_BETVE	P45431 betula verr
10	730	89.1	159	1	BV1K_BETVE	P43184 betula verr
11	722	88.2	159	1	BV1C_BETVE	P43176 betula verr
12	683	83.4	159	1	MPAG_ALNGL	P38948 alnus gluti
13	640	78.1	159	1	MPA2_CARBE	P38950 carpinus be
14	619	75.6	159	1	MPA1_CARBE	P38949 carpinus be
15	615	75.1	159	1	MPAA_CORAV	Q08407 corylus ave
16	505	61.7	160	1	PRU1_PRUAV	O24248 prunus aviu
17	463.5	56.6	158	1	MAL1_MALDO	P43211 malus domes
18	420.5	51.3	157	1	PR1_MEDSA	Q43560 medicago sa
19	386	47.1	158	1	DRR3_PEA	P14710 pisum sativ
20	382	46.6	158	1	AB18_PEA	Q06930 pisum sativ
21	381	46.5	158	1	SAM2_SOYBN	P26987 glycine max
22	377	46.0	158	1	DRR4_PEA	P27047 pisum sativ
23	374.5	45.7	159	1	DRR1_PEA	P13239 pisum sativ
24	370	45.2	155	1	PR1_PHAVU	P25985 phaseolus v
25	362.5	44.3	155	1	PR2_PHAVU	P25986 phaseolus v
26	349	42.6	156	1	L18B_LUPLU	P52779 lupinus lut
27	342.5	41.8	155	1	PRS1_SOLTU	P17641 solanum tub
28	342.5	41.8	155	1	PRS2_SOLTU	P17642 solanum tub
29	340	41.5	156	1	L18A_LUPLU	P52778 lupinus lut
30	332.5	40.6	157	1	AB17_PEA	Q06931 pisum sativ
31	330.5	40.4	158	1	PR2_PETCR	P27538 petroselinu
32	327	39.9	154	1	RNS1_PANGI	P80889 panax ginse
33	316	38.6	155	1	PR11_PETCR	P19417 petroselinu
34	312.5	38.2	153	1	RNS2_PANGI	P80890 panax ginse
35	312	38.1	155	1	PR13_PETCR	P19418 petroselinu
36	310.5	37.9	154	1	MPAG_APIGR	P49372 apium grave
37	301	36.8	157	1	RAP_TAROF	O49065 taraxacum o
38	278.5	34.0	154	1	DAU1_DAUCA	O04298 daucus car
39	236	28.8	158	1	PR1_ASPOF	Q05736 asparagus c
40	88	10.7	615	1	DNAK_THETH	Q56235 thermus aqu
41	80.5	9.8	956	1	CB31_YEAST	P32504 saccharomyc
42	79	9.6	387	1	YRS8_CAEEL	Q10004 caenorhabdi
43	79	9.6	726	1	NU84_YEAST	P52891 saccharomyc
44	78	9.5	1459	1	CA12_MOUSE	P28481 mus musculu
45	77.5	9.5	889	1	NODV_BRAJA	P15939 bradyrhizob

ALIGNMENTS

RESULT 1
BV1A_BETVE
ID BV1A_BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A).
GN BETVIA OR BETVI.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 1-34.
RC TISSUE=POLLEN;
RX MEDLINE; 90005395.
RA Breiteneder H., Pettenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
RN [3]
RP SEQUENCE.
RC TISSUE=POLLEN;
RX MEDLINE; 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL SEQUENCE.
RX MEDLINE; 91317572.
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE; 97102431.
RA Gajhede M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED

```
CC       PROTEIN.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X15877; CAA33887.1; -.
DR   EMBL; Z80098; CAB02153.1; -.
DR   EMBL; Z80099; CAB02154.1; -.
DR   EMBL; Z80104; CAB02159.1; -.
DR   PIR; S05376; S05376.
DR   PDB; 1BTV; 12-AUG-97.
DR   PDB; 1BV1; 17-SEP-97.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family;
KW   3D-structure.
FT   INIT_MET      0      0
FT   VARIANT      62     62       F -> L.
SQ   SEQUENCE   159 AA;  17440 MW;  96E181194BBA83E6 CRC64;


  Query Match             99.5%;  Score 815;  DB 1;  Length 159;
  Best Local Similarity   99.4%;  Pred. No. 1.7e-63;
  Matches  158;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   2
BV1J_BETVE
ID   BV1J_BETVE     STANDARD;      PRT;   159 AA.
AC   P43183;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-J (BET V I-J).
GN   BETV1J.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77271; CAA54487.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17408 MW;  D2AC26E9E7710A8D CRC64;


  Query Match             97.1%;  Score 795;  DB 1;  Length 159;
  Best Local Similarity   95.6%;  Pred. No. 8.8e-62;
  Matches  152;  Conservative    5;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||:||||||:||||||||||||||||||:|||||||:|||
Db     61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||||||||:|||||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   3
BV1E_BETVE
ID   BV1E_BETVE     STANDARD;      PRT;   159 AA.
AC   P43178;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-E (BET V I-E).
GN   BETV1E.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
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CC   ----------------------------------------------------------------------
DR   EMBL; X77267; CAA54483.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17316 MW;  3E752543EDD1A08E CRC64;


  Query Match             96.5%;  Score 790;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 2.4e-61;
  Matches  151;  Conservative    6;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:||||| |||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     61 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||||||||||:||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   4
BV1F_BETVE
ID   BV1F_BETVE     STANDARD;      PRT;   159 AA.
AC   P43179;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V I-F/I).
GN   BETV1F AND BETV1I.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X77268; CAA54484.1; -.
DR   EMBL; X77274; CAA54490.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17421 MW;  6063F9C82A71165C CRC64;


  Query Match             96.3%;  Score 789;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 2.9e-61;
  Matches  151;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| | |||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||||||||||:||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   5
BV1D_BETVE
ID   BV1D_BETVE     STANDARD;      PRT;   159 AA.
AC   P43177;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-D/H).
GN   BETV1D AND BETV1H.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; X77266; CAA54482.1; -.
DR   EMBL; X77270; CAA54486.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17418 MW;  8D1F3F8FE56106FD CRC64;


  Query Match             96.1%;  Score 787;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 4.3e-61;
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  Matches  151;  Conservative    4;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||||||| |||||||||||||||||||||||||||:|||
Db       1 GVFNYEIETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   6
BV1G_BETVE
ID   BV1G_BETVE     STANDARD;      PRT;   159 AA.
AC   P43180;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-G (BET V I-G).
GN   BETV1G.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77269; CAA54485.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17420 MW;  BBAEE6DCCE241DBB CRC64;


  Query Match             96.0%;  Score 786;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 5.2e-61;
  Matches  150;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:|||||||||||||||:|||| ||||||||||||||||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   7
BV1L_BETVE
ID   BV1L_BETVE     STANDARD;      PRT;   159 AA.
AC   P43185;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-L (BET V I-L).
GN   BETV1L.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77273; CAA54489.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17408 MW;  DE85F4ACC647BE0D CRC64;


  Query Match             95.2%;  Score 780;  DB 1;  Length 159;
  Best Local Similarity   93.7%;  Pred. No. 1.7e-60;
  Matches  149;  Conservative    5;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||| ||||||||:||||||||| | ||||||||||||||||||||||||:|||
Db       1 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   8
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BV1M_BETVE
ID   BV1M_BETVE     STANDARD;      PRT;   159 AA.
AC   P43186;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-M/N (BET V I-M/N).
GN   BETV1M AND BETV1N.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X81972; CAA57497.1; -.
DR   EMBL; X82028; CAA57550.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17391 MW;  ABA014F8849985E2 CRC64;


  Query Match             90.4%;  Score 740;  DB 1;  Length 159;
  Best Local Similarity   89.3%;  Pred. No. 4.7e-57;
  Matches  142;  Conservative    8;  Mismatches    9;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:|||||||||||||||||||||| |||||||||||||||||||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:|||||||  ||||:||:|||| :|||||||  ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT   9
BV1B_BETVE
ID   BV1B_BETVE     STANDARD;      PRT;   159 AA.
AC   P45431;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).
GN   BETV1B.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; X77200; CAA54421.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17406 MW;  ECC8D391E0C96267 CRC64;


  Query Match             89.6%;  Score 734;  DB 1;  Length 159;
  Best Local Similarity   88.7%;  Pred. No. 1.6e-56;
  Matches  141;  Conservative    8;  Mismatches   10;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db       1 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:|||||||  ||||:||:|||| :|||||||  ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  10
BV1K_BETVE
ID   BV1K_BETVE     STANDARD;      PRT;   159 AA.
AC   P43184;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
GN   BETV1K.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
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RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77272; CAA54488.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17392 MW;  AAF9E6F197C96517 CRC64;


  Query Match             89.1%;  Score 730;  DB 1;  Length 159;
  Best Local Similarity   88.1%;  Pred. No. 3.4e-56;
  Matches  140;  Conservative    9;  Mismatches   10;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||:|||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db      1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db     61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||:||| :|| || || ||||||||||||||||||
Db    121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  11
BV1C_BETVE
ID   BV1C_BETVE     STANDARD;      PRT;   159 AA.
AC   P43176;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-C (BET V I-C).
GN   BETV1C.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77265; CAA54481.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17383 MW;  AAEFA495A7C96517 CRC64;


  Query Match             88.2%;  Score 722;  DB 1;  Length 159;
  Best Local Similarity   87.4%;  Pred. No. 1.7e-55;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||:|||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db      1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db     61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||:|:||| :|| || || ||||||||||||||||||
Db    121 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  12
MPAG_ALNGL
ID   MPAG_ALNGL     STANDARD;      PRT;   159 AA.
AC   P38948;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN ALN G 1 (ALN G I).
OS   Alnus glutinosa (Alder).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Alnus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93094476.
RA   Breiteneder H., Ferreira F., Reikerstorfer A., Duchene M.,
RA   Valenta R., Hoffmann-Sommergruber K., Ebner C., Breitenbach M.,
RA   Kraft D., Scheiner O.;
RT   "Complementary DNA cloning and expression in Escherichia coli of Aln
RT   g I, the major allergen in pollen of alder (Alnus glutinosa).";
RL   J. Allergy Clin. Immunol. 90:909-917(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; S50892; AAB24432.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17207 MW;  8DCFB96C680688A6 CRC64;


  Query Match             83.4%;  Score 683;  DB 1;  Length 159;
  Best Local Similarity   81.1%;  Pred. No. 3.8e-52;
  Matches  129;  Conservative   12;  Mismatches   18;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| || |||||||||||||||| | |||||:|:|||||||||||||||||:|||
Db       1 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||:
Db      61 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||: |||:|  ||    ||:|||||||||||||
Db     121 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 159


RESULT  13
MPA2_CARBE
ID   MPA2_CARBE     STANDARD;      PRT;   159 AA.
AC   P38950;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM 2 (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293162.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; X66933; CAA47367.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17356 MW;  7D55C78195C1C551 CRC64;


  Query Match             78.1%;  Score 640;  DB 1;  Length 159;
  Best Local Similarity   75.5%;  Pred. No. 1.9e-48;
  Matches  120;  Conservative   20;  Mismatches   19;  Indels    0;  Gaps   -0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||: | |||:|||:|||||:|||||||||||:| |
Db       1 GVFNYEAETTSVIPAARLFKAFILDGNKLIPKVSPQAVSSVENVEGNGGPGTIKKITFSE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | | ||||:||:|:|||||||||:|||| :|| |||:|:|:|||| | ||||:|||:|:
Db      61 GSPVKYVKERVEEIDHTNFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | || ||| ||::| :||| | ||||||||||||:  ||
Db     121 HAKGYHEVNAEEMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  14
MPA1_CARBE
ID   MPA1_CARBE     STANDARD;      PRT;   159 AA.
AC   P38949;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORMS 1A AND 1B (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293162.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF ISOFORM 1A.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
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CC   ----------------------------------------------------------------------
DR   EMBL; X66932; CAA47366.1; -.
DR   EMBL; X66918; CAA47357.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
FT   VARIANT      37     37       V -> A (IN ISOFORM 1B).
FT   VARIANT      62     62       I -> S (IN ISOFORM 1B).
FT   VARIANT     132    132       K -> E (IN ISOFORM 1B).
SQ   SEQUENCE   159 AA;  17271 MW;  21DCD17A38851E8E CRC64;


  Query Match             75.6%;  Score 619;  DB 1;  Length 159;
  Best Local Similarity   73.0%;  Pred. No. 1.2e-46;
  Matches  116;  Conservative   21;  Mismatches   22;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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          |||||| || ||||||||||:::|||| | |||||| ||||||: ||||||||| |:| |
Db      1 GVFNYEAETPSVIPAARLFKSYVLDGDKLIPKVAPQVISSVENVGGNGGPGTIKNITFAE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:|||:||:||||||: ||||||:|||| :|| |||:|:|:||:| | ||||:|||:|:
Db     61 GIPFKFVKERVDEVDNANFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
             | || ||| ||::| :||| | ||||||||||||:  ||
Db    121 HAKGYHEVNAEKMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  15
MPAA_CORAV
ID   MPAA_CORAV     STANDARD;      PRT;   159 AA.
AC   Q08407;
DT   01-OCT-1994 (Rel. 30, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN COR A 1, ISOFORMS 5, 6, 11 AND 16 (COR A I).
OS   Corylus avellana (European hazel).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Corylus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93185652.
RA   Breiteneder H., Ferreira F., Hoffmann-Sommergruber K., Ebner C.,
RA   Breitenbach M., Rumpold H., Kraft D., Scheiner O.;
RT   "Four recombinant isoforms of Cor a I, the major allergen of hazel
RT   pollen, show different IgE-binding properties.";
RL   Eur. J. Biochem. 212:355-362(1993).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR. THE COR A I ISOFORMS DISPLAY DIFFERENT ANTIGENIC
CC       AND ALLERGENIC PROPERTIES.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CLONE COR A I/5.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ----------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between  the Swiss Institute of Bioinformatics  and the  EMBL outstation -
CC   the European Bioinformatics Institute.  There are no  restrictions on  its
CC   use  by  non-profit  institutions as long  as its content  is  in  no  way
CC   modified and this statement is not removed.  Usage  by  and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X70999; CAA50327.1; -.
DR   EMBL; X71000; CAA50328.1; -.
DR   EMBL; X70997; CAA50325.1; -.
DR   EMBL; X70998; CAA50326.1; -.
DR   PIR; S30053; S30053.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0
FT   VARIANT       7      7       V -> A (IN CLONE COR A 1/11).
FT   VARIANT      10     10       P -> T (IN CLONE COR A 1/11).
FT   VARIANT      14     14       P -> S (IN CLONE COR A 1/16).
FT   VARIANT      45     45       E -> G (IN CLONE COR A 1/16).
FT   VARIANT      80     80       T -> K (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     100    100       H -> S (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     113    113       I -> T (IN CLONE COR A 1/16).
FT   VARIANT     133    133       M -> I (IN CLONE COR A 1/11).
SQ   SEQUENCE   159 AA;  17381 MW;  E0F5E2A218E8D768 CRC64;


  Query Match           75.1%;  Score 615;  DB 1;  Length 159;
  Best Local Similarity  72.3%;  Pred. No. 2.6e-46;
  Matches  115;  Conservative   22;  Mismatches   22;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| || |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      1 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:|||||:||| |:|:|||| :|| |||: :|:|||| | |||||||||:|:
Db     61 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
             | |||||: |||:| :||| | ||||||:|||||| ||
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Search completed: December 11, 2000, 10:36:31
Job time: 2959 sec
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GenCore version 4.5

OM nucleic - nucleic search, using sw model

Run on: December 11, 2000, 10:23:53 ; Search time 993.56 Seconds
(without alignments)
2110.027 Million cell updates/sec

Title: US-09-270-910-36
Perfect score: 480
Sequence: 1 ggtgtgtttaattatgagac.....actccgatgcctacaactaa 480

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 1033670 seqs, 2183789903 residues

Total number of hits satisfying chosen parameters: 2067340

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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1: gb_ba1:*
2: gb_ba2:*
3: gb_om:*
4: gb_ov:*
5: gb_pat:*
6: gb_ph:*
7: gb_pl1:*
8: gb_pl2:*
9: gb_pr1:*
10: gb_pr2:*
11: gb_pr3:*
12: em_fun:*
13: em_hum1:*
14: em_hum2:*
15: em_in:*
16: em_om:*
17: em_or:*
18: em_ov:*
19: em_pat:*
20: em_ph:*
21: em_pl:*
22: em_ro:*
23: em_sts:*
24: em_sy:*
25: em_un:*
26: em_vi:*
27: gb_htg1:*
28: gb_htg2:*
29: gb_in1:*
30: gb_in2:*
31: em_ba1:*
32: em_ba2:*
33: em_hum3:*
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35: gb_pr4:*
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57: gb_htg17:*
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60: em_htg6:*
61: em_htg7:*
62: em_hum6:*
63: gb_htg18:*
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65: gb_ba3:*
66: em_htg8:*
67: em_htg9:*
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89: gb_sts1:*
90: gb_sts2:*
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93: gb_vi1:*
94: gb_vi2:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	480	100.0	483	8	BVZ80104	Z80104 B.verrucosa
2	473.6	98.7	483	8	BVZ80106	Z80106 B.verrucosa
3	470.4	98.0	672	5	I77098	I77098 Sequence 21
4	470.4	98.0	691	8	BVBETV1	X15877 Birch mRNA
5	468.8	97.7	483	8	BVAJ2107	AJ002107 Betula ve
6	468.8	97.7	483	8	BVGC11	Z72429 B.verrucosa
7	468.8	97.7	483	8	BVGC31	Z72432 B.verrucosa
8	468.8	97.7	483	8	BVZ80098	Z80098 B.verrucosa
9	467.4	97.4	480	5	I77099	I77099 Sequence 22
10	467.2	97.3	483	8	BVAJ2108	AJ002108 Betula ve
11	467.2	97.3	483	8	BVZ80099	Z80099 B.verrucosa
12	465.6	97.0	483	8	BVAJ2109	AJ002109 Betula ve

13	465.6	97.0	483	8	BVE6906	AJ006906 Betula ve
14	465.6	97.0	483	8	BVZ80105	Z80105 B.verrucosa
15	462.4	96.3	483	8	BVZ80101	Z80101 B.verrucosa
16	462.4	96.3	483	8	BVZ80103	Z80103 B.verrucosa
17	460.8	96.0	483	8	BVE6904	AJ006904 Betula ve
18	460.8	96.0	483	8	BVE6911	AJ006911 Betula ve
19	460.8	96.0	483	8	BVZ80102	Z80102 B.verrucosa
20	459.2	95.7	483	7	AF124838	AF124838 Betula pe
21	459.2	95.7	483	8	BVE6910	AJ006910 Betula ve
22	457.6	95.3	483	8	BVE6908	AJ006908 Betula ve
23	454.4	94.7	483	8	BVE6907	AJ006907 Betula ve
24	452.8	94.3	483	8	BVE6903	AJ006903 Betula ve
25	452.8	94.3	483	8	BVZ80100	Z80100 B.verrucosa
26	451.8	94.1	490	8	BVE6905	AJ006905 Betula ve
27	450.2	93.8	490	8	BVE6913	AJ006913 Betula ve
28	449.6	93.7	483	8	BVAJ2110	AJ002110 Betula ve
29	448	93.3	483	7	AF124837	AF124837 Betula pe
30	448	93.3	677	8	BVBETV1D	X77266 B.verrucosa
31	446.4	93.0	483	8	BVAJ2106	AJ002106 Betula ve
32	446.4	93.0	483	8	BVE6914	AJ006914 Betula ve
33	444.8	92.7	483	8	BVE6909	AJ006909 Betula ve
34	441.6	92.0	571	8	BVBETV1L	X77273 B.verrucosa
35	441.6	92.0	677	8	BVBETV1H	X77270 B.verrucosa
36	438.4	91.3	483	8	BVE6915	AJ006915 Betula ve
37	438.4	91.3	701	8	BVBETV1G	X77269 B.verrucosa
38	435.2	90.7	572	8	BVBETV1J	X77271 B.verrucosa
39	433.6	90.3	572	8	BVBETV1F	X77268 B.verrucosa
40	433.6	90.3	572	8	BVBETV1I	X77274 B.verrucosa
41	432	90.0	572	8	BVBETV1E	X77267 B.verrucosa
42	425.6	88.7	483	8	BVE6912	AJ006912 Betula ve
43	424	88.3	483	7	AF124839	AF124839 Betula pe
44	417.6	87.0	687	8	BVBETV1M	X81972 B.verrucosa
45	417.6	87.0	714	8	BVBETV1B	X77200 B.verrucosa

ALIGNMENTS

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RESULT   1
BVZ80104
LOCUS       BVZ80104      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2227).
ACCESSION   Z80104
VERSION     Z80104.1  GI:1542868
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="2227"
                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
                     /product="pollen allergen Bet v 1"
                     /protein_id="CAB02159.1"
                     /db_xref="GI:1542869"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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                     "
BASE COUNT      148 a    110 c    122 g    103 t
ORIGIN
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Query Match 100.0%; Score 480; DB 8; Length 483;
Best Local Similarity 100.0%; Pred. No. 2.1e-126;
Matches 480; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db       4 GGTGTGTTTAATTATGAGACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 GCCTTTATCCTTGATGGCGATAACCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT   2
BVZ80106
LOCUS       BVZ80106      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2301).
ACCESSION   Z80106
VERSION     Z80106.1  GI:1542872
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="2301"
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                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
                     /product="pollen allergen Bet v 1"
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BASE COUNT      149 a    109 c    120 g    105 t
ORIGIN


  Query Match           98.7%;  Score 473.6;  DB 8;  Length 483;
  Best Local Similarity   99.2%;  Pred. No. 1.4e-124;
  Matches  476;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

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          ||||| |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      4 GGTGTATTTAATTATGAGACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
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Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||
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Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   3
I77098
LOCUS       I77098        672 bp    DNA             PAT       03-APR-1998
DEFINITION  Sequence 21 from patent US 5693495.
ACCESSION   I77098
VERSION     I77098.1  GI:3013252
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 672)
  AUTHORS   Breiteneder,H., Valenta,R., Breitenbach,M., Kraft,D., Rumpold,H.
            and Scheiner,O.
  TITLE     Allergens of alder pollen and applications thereof
  JOURNAL   Patent: US 5693495-A 21 02-DEC-1997;
FEATURES             Location/Qualifiers
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BASE COUNT      218 a    130 c    158 g    166 t
ORIGIN


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  Matches  474;  Conservative    0;  Mismatches    6;  Indels    0;  Gaps    0;

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          ||||| || ||||| || ||||||||||||||||||||||||||||||||||||||||||
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Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
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Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   4
BVBETV1
LOCUS       BVBETV1       691 bp    mRNA            PLN       12-SEP-1993
DEFINITION  Birch mRNA for pollen allergen BetvI.
ACCESSION   X15877
VERSION     X15877.1  GI:17937
KEYWORDS    allergen; BetvI gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 691)
  AUTHORS   Breiteneder,H., Pettenburger,K., Bito,A., Valenta,R., Kraft,D.,
            Rumpold,H., Scheiner,O. and Breitenbach,M.
  TITLE     The gene coding for the major birch pollen allergen Betv1, is
            highly homologous to a pea disease resistance response gene
  JOURNAL   EMBO J. 8 (7), 1935-1938 (1989)
  MEDLINE   90005395
COMMENT     Data kindly reviewed (01-MAY-1990) by Breitenbach M.
FEATURES             Location/Qualifiers
     source          1. .691
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /tissue_type="pollen"
                     /clone_lib="lambda gt11"
     CDS             49. .531
                     /note="BetvI allergen (AA 1-160)"
                     /codon_start=1
                     /protein_id="CAA33887.1"
                     /db_xref="GI:17938"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
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     misc_feature    677. .682
                     /note="pot. polyA signal"
     polyA_site      691
                     /note="polyA site"
BASE COUNT      204 a    143 c    161 g    183 t
ORIGIN
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Query Match 98.0%; Score 470.4; DB 8; Length 691;
Best Local Similarity 98.8%; Pred. No. 1.2e-123;
Matches 474; Conservative 0; Mismatches 6; Indels 0; Gaps 0;

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Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| || ||||||||||||||||||||||||||||||||||||||||||
Db     52 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 111

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db    112 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 171

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    172 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 231

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    232 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 291

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    292 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 351

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    352 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 411

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    412 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 471

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    472 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 531
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RESULT   5
BVAJ2107
LOCUS       BVAJ2107      483 bp    mRNA            PLN       07-JAN-2000
DEFINITION  Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1
            at12).
ACCESSION   AJ002107
VERSION     AJ002107.1  GI:2564221
KEYWORDS    Betv1 gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
            eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
            Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
  TITLE     New Bet v 1 isoforms including a naturally occurring truncated form
            of the protein derived from Austrian birch pollen
  JOURNAL   Mol. Immunol. 36 (10), 639-645 (1999)
  MEDLINE   99437514
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and
            Experimental Pathology, University of Vienna, Waehringer Guertel
            18-20, A-1090 Vienna, AUSTRIA
FEATURES             Location/Qualifiers
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                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /clone="at12"
                     /tissue_type="pollen"
                     /dev_stage="mature"
     gene            1. .483
                     /gene="Betv1"
     CDS             1. .483
                     /gene="Betv1"
                     /note="isoform at12"
                     /codon_start=1
                     /product="pollen allergen Betv1"
                     /protein_id="CAA05187.1"
                     /db_xref="GI:2564222"
                     /db_xref="SPTREMBL:O24642"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNE
                     IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
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BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN
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Query Match 97.7%; Score 468.8; DB 8; Length 483;
Best Local Similarity 98.5%; Pred. No. 3.3e-123;
Matches 473; Conservative 0; Mismatches 7; Indels 0; Gaps 0;

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Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||| ||||||||||||||||||||||||||
Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATGGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT   6
BVGC11
LOCUS       BVGC11        483 bp    DNA             PLN       08-MAY-1998
DEFINITION  B.verrucosa gene for major allergen Bet v 1 (clone BVGC11).
ACCESSION   Z72429
VERSION     Z72429.1  GI:1321711
KEYWORDS    major allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
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REFERENCE   1  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K.
  TITLE     Direct Submission
  JOURNAL   Submitted (29-APR-1996) Hoffmann-Sommergruber K., University of
            Vienna, Vienna, Austria, Gen. & Exp. Pathology, Waehringer Guertel
            18-20, Vienna, Austria, A-1090
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K., Vanek-Krebitz,M., Radauer,C., Wen,J.,
            Ferreira,F., Scheiner,O. and Breiteneder,H.
  TITLE     Genomic characterization of members of the Bet v 1 family: genes
            coding for allergens and pathogenesis-related proteins share intron
            positions
  JOURNAL   Gene 197 (1-2), 91-100 (1997)
  MEDLINE   97473499
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /clone="BVGC11"
                     /tissue_type="leaves"
     CDS             1. .483
                     /codon_start=1
                     /product="major allergen Bet v 1"
                     /protein_id="CAA96538.1"
                     /db_xref="GI:1321712"
                     /db_xref="SPTREMBL:Q42499"
                     /translation="MGVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
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BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN
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  Query Match             97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db       4 GGTGTTTTCAATTACGAAACTGAGGCCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacactttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT   7
BVGC31
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LOCUS       BVGC31        483 bp    DNA             PLN       08-MAY-1998
DEFINITION  B.verrucosa gene for major allergen Bet v 1 (clone BVGC31).
ACCESSION   Z72432
VERSION     Z72432.1  GI:1321719
KEYWORDS    major allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K.
  TITLE     Direct Submission
  JOURNAL   Submitted (29-APR-1996) Hoffmann-Sommergruber K., University of
            Vienna, Vienna, Austria, Gen. & Exp. Pathology, Waehringer Guertel
            18-20, Vienna, Austria, A-1090
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K., Vanek-Krebitz,M., Radauer,C., Wen,J.,
            Ferreira,F., Scheiner,O. and Breiteneder,H.
  TITLE     Genomic characterization of members of the Bet v 1 family: genes
            coding for allergens and pathogenesis-related proteins share intron
            positions
  JOURNAL   Gene 197 (1-2), 91-100 (1997)
  MEDLINE   97473499
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
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                     /tissue_type="Mature Leaves"
     CDS             1. .483
                     /codon_start=1
                     /product="major allergen Bet v 1"
                     /protein_id="CAA96541.1"
                     /db_xref="GI:1321720"
                     /db_xref="SPTREMBL:Q42499"
                     /translation="MGVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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                     "
BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN
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  Query Match             97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| || |||||| ||||||||||||||||||||||||||||||||||
Db       4 GGTGTTTTCAATTACGAAACTGAGGCCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   8
BVZ80098
LOCUS       BVZ80098      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 224).
ACCESSION   Z80098
VERSION     Z80098.1  GI:1542856
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
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                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="224"
                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
                     /product="pollen allergen Bet v 1"
                     /protein_id="CAB02153.1"
                     /db_xref="GI:1542857"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN


  Query Match           97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| || ||||||||||||||||||||||||| ||||||||||||||||
Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   9
I77099
LOCUS       I77099        480 bp    DNA             PAT       03-APR-1998
DEFINITION  Sequence 22 from patent US 5693495.
ACCESSION   I77099
VERSION     I77099.1  GI:3013253
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 480)
  AUTHORS   Breiteneder,H., Valenta,R., Breitenbach,M., Kraft,D., Rumpold,H.
            and Scheiner,O.
  TITLE     Allergens of alder pollen and applications thereof
  JOURNAL   Patent: US 5693495-A 22 02-DEC-1997;
FEATURES             Location/Qualifiers
     source          1. .480
                     /organism="unknown"
BASE COUNT      147 a    110 c    120 g    103 t
ORIGIN


  Query Match           97.4%;  Score 467.4;  DB 5;  Length 480;
  Best Local Similarity   98.7%;  Pred. No. 8.2e-123;
  Matches  471;  Conservative    0;  Mismatches    6;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| || ||||||||||||||||||||||||||||||||||||||||||||
Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAAC 480
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RESULT  10
BVAJ2108
LOCUS       BVAJ2108      483 bp    mRNA            PLN       07-JAN-2000
DEFINITION  Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1
            at15).
ACCESSION   AJ002108
VERSION     AJ002108.1  GI:2564223
KEYWORDS    Betv1 gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
            eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
            Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
  TITLE     New Bet v 1 isoforms including a naturally occurring truncated form
            of the protein derived from Austrian birch pollen
  JOURNAL   Mol. Immunol. 36 (10), 639-645 (1999)
  MEDLINE   99437514
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and
            Experimental Pathology, University of Vienna, Waehringer Guertel
            18-20, A-1090 Vienna, AUSTRIA
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /clone="at15"
                     /tissue_type="pollen"
                     /dev_stage="mature"
     gene            1. .483
                     /gene="Betv1"
     CDS             1. .483
                     /gene="Betv1"
                     /note="isoform at15"
                     /codon_start=1
                     /product="pollen allergen Betv1"
                     /protein_id="CAA05188.1"
                     /db_xref="GI:2564224"
                     /db_xref="SPTREMBL:O23752"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
                     IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
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BASE COUNT      148 a    110 c    122 g    103 t
ORIGIN
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  Query Match             97.3%;  Score 467.2;  DB 8;  Length 483;
  Best Local Similarity   98.3%;  Pred. No. 9.3e-123;
  Matches  472;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| || ||||||||||||||||||||||||||| ||||||||||||||
Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||||| ||| ||||||||||||||||||||||||||||||||
Db     64 GCCTTTATCCTTGATGGCGATAATCTCGTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT  11
BVZ80099
LOCUS       BVZ80099      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2230).
ACCESSION   Z80099
VERSION     Z80099.1  GI:1542858
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="2230"
                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
                     /product="pollen allergen Bet v 1"
                     /protein_id="CAB02154.1"
                     /db_xref="GI:1542859"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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BASE COUNT      148 a    111 c    121 g    103 t
ORIGIN
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  Query Match             97.3%;  Score 467.2;  DB 8;  Length 483;
  Best Local Similarity   98.3%;  Pred. No. 9.3e-123;
  Matches  472;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAACTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||
Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT  12
BVAJ2109
LOCUS       BVAJ2109      483 bp    mRNA            PLN       07-JAN-2000
DEFINITION  Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1
            at22).
ACCESSION   AJ002109
VERSION     AJ002109.1  GI:2564225
KEYWORDS    Betv1 gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
            eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
            Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
  TITLE     New Bet v 1 isoforms including a naturally occurring truncated form
            of the protein derived from Austrian birch pollen
  JOURNAL   Mol. Immunol. 36 (10), 639-645 (1999)
  MEDLINE   99437514
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and
            Experimental Pathology, University of Vienna, Waehringer Guertel
            18-20, A-1090 Vienna, AUSTRIA
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /clone="at22"
                     /tissue_type="pollen"
                     /dev_stage="mature"
     gene            1. .483
                     /gene="Betv1"
     CDS             1. .483
                     /gene="Betv1"
                     /note="isoform at22"
                     /codon_start=1
                     /product="pollen allergen Betv1"
                     /protein_id="CAA05189.1"
                     /db_xref="GI:2564226"
                     /db_xref="SPTREMBL:O24642"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNE
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BASE COUNT      148 a    109 c    122 g    104 t
ORIGIN
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  Query Match           97.0%;  Score 465.6;  DB 8;  Length 483;
  Best Local Similarity  98.1%;  Pred. No. 2.7e-122;
  Matches  471;  Conservative    0;  Mismatches    9;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATGGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATAAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT  13
BVE6906
LOCUS       BVE6906       483 bp    mRNA            PLN       07-JAN-2000
DEFINITION  Betula verrucosa mRNA for pollen allergen Betv1, isoform at21.
ACCESSION   AJ006906
VERSION     AJ006906.1  GI:4006948
KEYWORDS    Betv1 gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
            eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
            Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
  TITLE     New Bet v 1 isoforms including a naturally occurring truncated form
            of the protein derived from Austrian birch pollen
  JOURNAL   Mol. Immunol. 36 (10), 639-645 (1999)
  MEDLINE   99437514
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (10-JUN-1998) Friedl-Hajek R., Institute of General and
            Experimental Pathology, University of Vienna, Waehringer Guertel
            18-20, A-1090 Vienna, AUSTRIA
FEATURES             Location/Qualifiers
     source          1. .483
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                     /db_xref="taxon:3505"
                     /dev_stage="mature"
                     /tissue_type="pollen"
                     /note="from Austrian trees"
     gene            1. .483
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     CDS             1. .483
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                     "
BASE COUNT      149 a    108 c    121 g    105 t
ORIGIN


  Query Match             97.0%;  Score 465.6;  DB 8;  Length 483;
  Best Local Similarity   98.1%;  Pred. No. 2.7e-122;
  Matches  471;  Conservative    0;  Mismatches    9;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||||||||||||||||||||||  ||||||||||||||||||||||||||||||||||||
Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATTAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT  14
BVZ80105
LOCUS       BVZ80105      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2229).
ACCESSION   Z80105
VERSION     Z80105.1  GI:1542870
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
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                     /db_xref="taxon:3505"
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                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
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BASE COUNT      148 a    109 c    124 g    102 t
ORIGIN


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  Best Local Similarity   98.1%;  Pred. No. 2.7e-122;
  Matches  471;  Conservative    0;  Mismatches    9;  Indels    0;  Gaps    0;

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Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT  15
BVZ80101
LOCUS       BVZ80101      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 184).
ACCESSION   Z80101
VERSION     Z80101.1  GI:1542862
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
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  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
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                     /clone="184"
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     CDS             1. .483
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BASE COUNT      146 a    111 c    122 g    104 t
ORIGIN


  Query Match             96.3%;  Score 462.4;  DB 8;  Length 483;
  Best Local Similarity   97.7%;  Pred. No. 2.2e-121;
  Matches  469;  Conservative    0;  Mismatches   11;  Indels    0;  Gaps    0;

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Db       4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTTGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCGTGGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db     364 CACACCAAAGGCGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacactttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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GenCore version 4.5

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Perfect score: 480
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Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 262060 seqs, 75620496 residues

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Minimum DB seq length: 0
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Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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	2	467.4	97.4	480	2	US-07-847-010-22	Sequence 22, Appl
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	4	371.4	77.4	480	2	US-07-847-010-2	Sequence 2, Appli
	5	353.6	73.7	655	2	US-07-847-010-15	Sequence 15, Appl
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	7	348.8	72.7	742	2	US-07-847-010-12	Sequence 12, Appl
	8	345.8	72.0	480	2	US-07-847-010-13	Sequence 13, Appl
	9	345.6	72.0	619	2	US-07-847-010-9	Sequence 9, Appli
	10	344	71.7	860	2	US-07-847-010-18	Sequence 18, Appl
	11	342.6	71.4	480	2	US-07-847-010-10	Sequence 10, Appl
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	14	126.8	26.4	465	1	US-08-363-010-2	Sequence 2, Appli
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	29	30	6.2	2368	7	5262177-1	Patent No. 5262177
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ALIGNMENTS

RESULT 1
US-07-847-010-21
; Sequence 21, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 21:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 672 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: cDNA

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;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  birch (Betula sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-21


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  Best Local Similarity   98.8%;  Pred. No. 3.2e-143;
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RESULT   2
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; Sequence 22, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  22:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  birch (Betula sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-22


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Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAAC 480


RESULT   3
US-07-847-010-1
; Sequence 1, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
```

```
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  665 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
US-07-847-010-1


  Query Match           78.0%;  Score 374.4;  DB 2;  Length 665;
  Best Local Similarity  86.2%;  Pred. No. 4.3e-112;
  Matches  414;  Conservative    0;  Mismatches   66;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| ||  | || ||| |||| |||||||||||| |||| |||||||||
Db      4 GGTGTTTTCAATTACGAAGCGGAAACCCCCTCCGTTATCCCAGCGGCTCGGCTGTTCAAG 63

Qy     61 gccttttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||||||||||||||||||||||| ||| ||||||||||||||  ||||  ||||||||
Db     64 GCCTTTATCCTTGATGGCGATAAGCTCCTTCCAAAGGTTGCACCTGAAGCTGTTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||| ||||||||||||||||||||||||||||||| |||||||||| ||||||||||
Db    124 GTTGAGAACATTGAAGGAAATGGAGGGCCTGGAACCATCAAGAAGATCACCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  ||||||  |||||||| ||||| || |||||||||| || | |  ||||||||||
Db    184 GGCAGCCCTTTTAAGTACGTAAAGGAGAGGGTTGATGAGGTTGATCGCGTAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  | ||||||||||||||| ||| || | |||||| || |||||||| |||  |||

Db    244 TACAGCTTCAGCGTGATCGAGGGTGGTGCCGTGGGCGACGCACTGGAGAAGGTCTGTAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||| |||||||||||| |||||||||||||||||||||||||||||||||||||||| |
Db    304 GAGATCAAGATAGTGGCAGCCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          |||||||||| ||||||||| | || ||||||||| |||||      ||||||| || |
Db    364 CACACCAAAGGCGACCATGAGATAAATGCAGAGCAGATTAAGATTGAAAAAGAAAAGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          | |  |||| | | ||||||||||||||||||||||||||||| ||||||||||||||
Db    424 GTGGGACTTCTCAAGGCCGTTGAGAGCTACCTCTTGGCACACTCTGATGCCTACAACTAA 483


RESULT   4
US-07-847-010-2
; Sequence 2, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
US-07-847-010-2


  Query Match           77.4%;  Score 371.4;  DB 2;  Length 480;
  Best Local Similarity  86.2%;  Pred. No. 3.4e-111;
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  Matches  411;  Conservative    0;  Mismatches   66;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| ||  | || ||| |||| |||||||||||| ||||| |||||||||
Db      4 GGTGTTTTCAATTACGAAGCGGAAACCCCCTCCGTTATCCCAGCGGCTCGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          |||||||||||||||||||||| ||| ||||||||||||||||  ||||  ||||||||
Db     64 GCCTTTATCCTTGATGGCGATAAGCTCCTTCCAAAGGTTGCACCTGAAGCTGTTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||  |||||||||||||||||||||||||||||||||||  |||||||||| ||||||||||
Db    124 GTTGAGAACATTGAAGGAAATGGAGGGCCTGGAACCATCAAGAAGATCACCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  ||||||  ||||||||  |||||  ||  |||||||||||  ||  |  |  ||||||||||
Db    184 GGCAGCCCTTTTAAGTACGTAAAGGAGAGGGTTGATGAGGTTGATCGCGTAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  | ||||||||||||||  ||| ||  |  ||||||  ||  ||||||||  |||  |||
Db    244 TACAGCTTCAGCGTGATCGAGGGTGGTGCCGTGGGCGACGCACTGGAGAAGGTCTGTAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          |||||  ||||||||||||  ||||||||||||||||||||||||||||||||||||||||  |
Db    304 GAGATCAAGATAGTGGCAGCCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||  ||||||||  |  ||  ||||||||  |||||       |||||||  ||  |
Db    364 CACACCAAAGGCGACCATGAGATAAATGCAGAGCAGATTAAGATTGAAAAAGAAAAGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          |  |   ||||  |  |||||||||||||||||||||||||||||||  ||||||||||||
Db    424 GTGGGACTTCTCAAGGCCGTTGAGAGCTACCTCTTGGCACACTCTGATGCCTACAAC 480


RESULT   5
US-07-847-010-15
; Sequence 15, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  15:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  655 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-15


  Query Match             73.7%;  Score 353.6;  DB 2;  Length 655;
  Best Local Similarity   83.5%;  Pred. No. 2.4e-105;
  Matches  401;  Conservative    0;  Mismatches   79;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| ||| |||||||||||| |||||||| || ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGCTGAGACCACCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||| | ||||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||||| |||||||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || ||||||||||||||| || |||||||||| ||| ||||||||||| |
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db    244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| ||||||||||||||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| |||||||||||||||| | || |||||| || | ||||     |||||||||| |
Db    364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  |||||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT   6
US-07-847-010-16
; Sequence 16, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
```

```
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  16:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-16


  Query Match             73.0%;  Score 350.6;  DB 2;  Length 480;
  Best Local Similarity   83.4%;  Pred. No. 1.9e-104;
  Matches  398;  Conservative    0;  Mismatches   79;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db       4 GGTGTTTTCAATTACGAGGCTGAGACCACCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
             ||| | |||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db      64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           |||||||| |||||||||||||||||||||||||||| ||||| |||| |||| ||||
Db     124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           |||  || || |||||||||||||| || |||||||||| ||| ||||||||||| |
Db     184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db     244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
           ||| | |||||||||||| |||||| |||||||||||||||||||||||||||| |||| |
Db     304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||| ||||||||||||||| | || |||||| || | ||||     |||||||||| |
Db     364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
           |||| |||||| ||||| ||||||| |||||| |||||||||||| | ||  ||||||
Db     424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT   7
US-07-847-010-12
; Sequence 12, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  742 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-12


  Query Match             72.7%;  Score 348.8;  DB 2;  Length 742;
  Best Local Similarity   82.9%;  Pred. No. 9.1e-104;
  Matches  398;  Conservative    0;  Mismatches   82;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| |||  ||||||  |||| |||||||||||| ||  | |||||||||
Db       4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCAGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT   8
US-07-847-010-13
; Sequence 13, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  13:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-13


  Query Match             72.0%;  Score 345.8;  DB 2;  Length 480;
  Best Local Similarity   82.8%;  Pred. No. 6.8e-103;
  Matches  395;  Conservative    0;  Mismatches   82;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
Db      4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCAGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT   9
US-07-847-010-9
; Sequence 9, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
```

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;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  9:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  619 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-9


  Query Match             72.0%;  Score 345.6;  DB 2;  Length 619;
  Best Local Similarity   82.5%;  Pred. No. 9.1e-103;
  Matches  396;  Conservative    0;  Mismatches   84;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| |||  ||||||  |||| |||||||| || ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||| | ||||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||| ||||||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || |||||||||||||| || |||||||||| ||| ||||||||||| |
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db    244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| |||||||||||||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| ||||||| ||||||||| | || |||||| || | ||||     ||||||||||
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCA 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  |||||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT  10
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US-07-847-010-18
; Sequence 18, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  860 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-18


  Query Match             71.7%;  Score 344;  DB 2;  Length 860;
  Best Local Similarity   82.3%;  Pred. No. 3.6e-102;
  Matches  395;  Conservative    0;  Mismatches   85;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| |||  ||||||| |||| |||||| |||| ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGTTGAGACCCCCTCCGTTATCTCAGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||| | ||||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||| ||| ||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGGAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183
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Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || ||||||||||||||| || |||||||||| ||| ||||||||||||||
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          || |  |||| |||||||||||| | |  | | || ||||   |||||||  ||| || |
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAAGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| ||| ||||||| |||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGGGGATCCACCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| ||||||||||||||| | || |||||| || | ||||     |||||||||| |
Db    364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  |||||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT  11
US-07-847-010-10
; Sequence 10, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  10:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-10


  Query Match             71.4%;  Score 342.6;  DB 2;  Length 480;
  Best Local Similarity   82.4%;  Pred. No. 7.4e-102;
  Matches  393;  Conservative    0;  Mismatches   84;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| |||  ||||||  |||| |||||||| || ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||| | |||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||| |||||||||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || ||||||||||||||| || |||||||||| ||| |||||||||||| |
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db    244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| |||||||||||||||||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| ||||||| ||||||||| | || |||||| || | ||||     |||||||||
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCA 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  ||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT  12
US-07-847-010-19
; Sequence 19, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
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;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  19:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-19


  Query Match             71.0%;  Score 341;  DB 2;  Length 480;
  Best Local Similarity   82.2%;  Pred. No. 2.5e-101;
  Matches  392;  Conservative    0;  Mismatches   85;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| |||  ||||||| |||| |||||| |||| ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGTTGAGACCCCCTCCGTTATCTCAGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||| | |||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||||||| ||| |||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGGAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || |||||||||||||| || |||||||||| ||| ||||||||||||||
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          || |  |||| |||||||||||| | |  | | || ||||   |||||||  ||| || |
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAAGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| ||| ||||||| ||||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGGGGATCCACCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| ||||||||||||||||| | || |||||| || | ||||      |||||||||| |
Db    364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  ||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT  13
US-08-363-010-3
; Sequence 3, Application US/08363010
; Patent No. 5512484
;  GENERAL INFORMATION:
;    APPLICANT:  Yamamoto, Mika
;    APPLICANT:  Oheda, Kenji
;    TITLE OF INVENTION:  CARROT 16 KD PROTEIN, GENE CODING FOR
;    TITLE OF INVENTION:  SAID PROTEIN AND PLASMID CONTAINING SAID GENE
;    NUMBER OF SEQUENCES:  6
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Birch, Stewart, Kolasch & Birch, LLP
;      STREET:  8110 Gatehouse Road, Suite 500 East
;      CITY:  Falls Church
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22042
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/363,010
;      FILING DATE:  23-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Svensson, Leonard R.
;      REGISTRATION NUMBER:  30,330
;      REFERENCE/DOCKET NUMBER:  20-3628P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 205-8000
;      TELEFAX:  (703) 205-8050
;      TELEX:  248345
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  739 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Daucus carota
;      STRAIN:  Kuroda Gosun
US-08-363-010-3


  Query Match             26.7%;  Score 128;  DB 1;  Length 739;
  Best Local Similarity   56.9%;  Pred. No. 3.6e-32;
  Matches  255;  Conservative    0;  Mismatches  190;  Indels    3;  Gaps    1;

Qy     22 gagaccacctctgttatcccagcagctcgactgttcaaggcctttatccttgatggcgat 81
          |||| ||| |||    || | ||||   | | ||||  | | || |||||||||  |||
Db     38 GAGATCACTTCTTCAGTCTCCGCAGAGAAAATATTCAGCGGCATTGTCCTTGATGTTGAT 97

Qy     82 aacctctttccaaaggttgcaccccaagccattagcagtgttgaaaacattgaaggaaat 141
          |   |  |||| |||| ||| |||  |||    |  ||||| ||     || ||||| |
Db     98 ACAGTTATTCCCAAGGCTGCCCCCGGAGCTTACAAGAGTGTCGATG---TTAAAGGAGAC 154

Qy    142 ggagggcctggaaccattaagaagatcagctttcccgaaggcctccctttcaagtacgtg 201
          || ||  |||||||| | |  |  |||| | |||||||||   |||  |||  |   ||
Db    155 GGTGGAGCTGGAACCGTCAGAATTATCACCCTTCCCGAAGGTAGCCCAATCACCTCAATG 214

Qy    202 aaggacagagttgatgaggtggaccacacaaacttcaaatacaattacagcgtgatcgag 261
          | ||  ||   |||||  ||| || |      ||| | |||| ||| ||  || || ||
Db    215 ACGGTTAGGACTGATGCAGTGAACAAGGAGGCCTTGACATACGATTCCACAGTCATTGAT 274

Qy    262 ggcggtcccataggcgacacattggagaagatctccaacgagataaagatagtggcaacc 321
          || |    | |    ||     | ||    ||    | | | ||     | ||| ||||
Db    275 GGAGACATCCTTCTAGAATTCATCGAATCCATTGAAACCCATATGGTAGTTGTGCCAACT 334

Qy    322 cctgatggaggatccatcttgaagatcagcaacaagtaccacaccaaaggtgaccatgag 381
          |||| |||||   |||    |||| ||    ||  | ||||||||||| ||    | |
Db    335 GCTGACGGAGGTAGCATTACCAAGACCACTGCCATATTCCACACCAAAGGCGATGCCGTG 394

Qy    382 gtgaaggcagagcaggttaaggcaagtaaagaaatgggcgagacactttgagggccgtt 441
          ||    |  ||| |  | |||      | |    |  |    | ||||| | |||  ||
Db    395 GTTCCTGAGGAGAACATCAAGTTTGCAGATGCTCAGAACACTGCTCTTTTCAAGGCTATT 454
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Qy    442 gagagctacctcttggcacactccgatg 469
          |||  ||||||| | ||  | |  | ||
Db    455 GAGGCCTACCTCATTGCTAATTAAGCTG 482


RESULT  14
US-08-363-010-2
; Sequence 2, Application US/08363010
; Patent No. 5512484
;  GENERAL INFORMATION:
;    APPLICANT:  Yamamoto, Mika
;    APPLICANT:  Oheda, Kenji
;    TITLE OF INVENTION:  CARROT 16 KD PROTEIN, GENE CODING FOR
;    TITLE OF INVENTION:  SAID PROTEIN AND PLASMID CONTAINING SAID GENE
;    NUMBER OF SEQUENCES:  6
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Birch, Stewart, Kolasch & Birch, LLP
;      STREET:  8110 Gatehouse Road, Suite 500 East
;      CITY:  Falls Church
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22042
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/363,010
;      FILING DATE:  23-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Svensson, Leonard R.
;      REGISTRATION NUMBER:  30,330
;      REFERENCE/DOCKET NUMBER:  20-3628P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 205-8000
;      TELEFAX:  (703) 205-8050
;      TELEX:  248345
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  465 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Daucus carota
;      STRAIN:  Kuroda Gosun
US-08-363-010-2


  Query Match             26.4%;  Score 126.8;  DB 1;  Length 465;
  Best Local Similarity   57.0%;  Pred. No. 6.9e-32;
  Matches  252;  Conservative    0;  Mismatches  187;  Indels    3;  Gaps    1;

Qy     22 gagaccacctctgttatcccagcagctcgactgttcaaggcctttatccttgatggcgat 81
          |||| ||| |||    || | ||||    | | ||||  | | || |||||||||  |||
Db     25 GAGATCACTTCTTCAGTCTCCGCAGAGAAAATATTCAGCGGCATTGTCCTTGATGTTGAT 84

Qy     82 aacctctttccaaaggttgcaccccaagccattagcagtgttgaaaacattgaaggaaat 141
          |   |  |||| |||| ||| |||  |||    |  ||||| ||     || ||||| |
Db     85 ACAGTTATTCCCAAGGCTGCCCCCGGAGCTTACAAGAGTGTCGATG---TTAAAGGAGAC 141

Qy    142 ggagggcctggaaccattaagaagatcagctttcccgaaggcctccctttcaagtacgtg 201
          || ||  |||||||| | |  |  |||| | ||||||||||   |||  |||  |   ||
Db    142 GGTGGAGCTGGAACCGTCAGAATTATCACCCTTCCCGAAGGTAGCCCAATCACCTCAATG 201

Qy    202 aaggacagagttgatgaggtggaccacacaaacttcaaatacaattacagcgtgatcgag 261
          | ||  ||   |||||  ||| || |      ||| | |||| ||| ||  || || ||
Db    202 ACGGTTAGGACTGATGCAGTGAACAAGGAGGCCTTGACATACGATTCCACAGTCATTGAT 261

Qy    262 ggcggtcccataggcgacacattggagaagatctccaacgagataaagatagtggcaacc 321
          || |   | |    ||     | ||    ||    | | | ||     | ||| ||||
Db    262 GGAGACATCCTTCTAGAATTCATCGAATCCATTGAAACCCATATGGTAGTTGTGCCAACT 321

Qy    322 cctgatggaggatccatcttgaagatcagcaacaagtaccacaccaaaggtgaccatgag 381
          |||| |||||   |||   |||| ||    ||  | ||||||||||||| ||    | |
Db    322 GCTGACGGAGGTAGCATTACCAAGACCACTGCCATATTCCACACCAAAGGCGATGCCGTG 381

Qy    382 gtgaaggcagagcaggttaaggcaagtaaagaaatgggcgagacacttttgagggccgtt 441
          ||    |  ||| |  | |||       | |    |  |    | ||||| | |||  ||
Db    382 GTTCCTGAGGAGAACATCAAGTTTGCAGATGCTCAGAACACTGCTCTTTTCAAGGCTATT 441

Qy    442 gagagctacctcttggcacact 463
          |||  ||||||| | ||  | |
Db    442 GAGGCCTACCTCATTGCTAATT 463


RESULT  15
5312912-1
;Patent No. 5312912
;    APPLICANT: HADWIGER, LEE A.;CHIANG, CHIN C.;HOROVITZ,
;DANIEL A.
;    TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER
;INDUCIBLE TRAITS IN PLANTS
;    NUMBER OF SEQUENCES: 9
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/393,301
;      FILING DATE: 13-JUN-1989
;SEQ ID NO:1:
;      LENGTH: 2290
5312912-1


  Query Match             18.2%;  Score 87.4;  DB 7;  Length 2290;
  Best Local Similarity   56.4%;  Pred. No. 9.7e-19;
  Matches  163;  Conservative    0;  Mismatches  126;  Indels    0;  Gaps    0;

Qy    192 caagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaatacaattacag 251
          |||||| |||    ||| ||| ||    || ||  |  | ||||    | |||| |||||
Db   1430 caagtatgtgttacacaaagtggagttagtagatgatgctaactgggcaaacaactacag 1489

Qy    252 cgtgatcgagggcggtcccataggcgacacattggagaagatctccaacgagataaagat 311
          | |  | |  || | |    |    |||||| | ||||||||||||    |||   ||  |
Db   1490 catagttggaggtgttggacttccggacacagttgagaagatctcgtttgaggctaaatt 1549

Qy    312 agtggcaacccctgatggaggatccatcttgaagatcagcaacaagtaccacaccaaagg 371
          |||   ||  |||||||||||||    ||| | ||    || ||  | ||||||||
Db   1550 gtctgcaggaccaaatggaggatccattgcaaagctgagtgtgaaatattataccaaagg 1609

Qy    372 tgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggcgagacactttt 431
          |||   |      |  | |||| |  | |||    | ||||  |  || ||    ||||
Db   1610 tgatgctattcctagtgaagaggaaatcaagaatggcaaagccaaaggtgaaggtatttt 1669

Qy    432 gagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          | |||  ||||  | |||    ||||  |  | |||  | || |  ||
Db   1670 caaggctcttgaaggttactgtgtggctaatcctgattacaactaaaaa 1718


Search completed: December 11, 2000, 15:57:10
Job time: 19997 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 508.71 Seconds
(without alignments)
19.835 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 182106 seqs, 63460219 residues

Total number of hits satisfying chosen parameters: 182106

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_65:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	815	99.5	160	2	S05376	major pollen aller
2	795	97.1	160	2	G55699	major pollen aller
3	790	96.5	160	2	D55699	major pollen aller
4	789	96.3	160	2	E55699	major pollen aller
5	787	96.1	160	2	C55699	major pollen aller
6	786	96.0	160	2	F55699	major pollen aller
7	780	95.2	160	2	I55699	major pollen aller
8	740	90.4	160	2	A57427	major pollen aller
9	734	89.6	160	2	A55699	major pollen aller
10	730	89.1	160	2	H55699	major pollen aller
11	722	88.2	160	2	B55699	major pollen aller
12	707	86.3	160	2	S47250	gene 1-Sc1 protein
13	703	85.8	159	2	S47251	gene 1 Sc2 protein
14	621	75.8	160	2	S30054	major allergen Cor
15	621	75.8	160	2	S30055	major allergen Cor
16	615	75.1	160	2	S30053	major allergen Cor
17	612	74.7	160	2	S47249	gene 1-Sc3 protein
18	601	73.4	160	2	S30056	major allergen Cor
19	545	66.5	160	2	T17005	major allergen Mal
20	534	65.2	160	2	T17006	major allergen Mal
21	530	64.7	160	2	T17007	major allergen Mal
22	505.5	61.7	159	2	T17004	major allergen Mal
23	465.5	56.8	159	2	JC4276	major allergen Mal
24	447.5	54.6	153	2	S51119	MalD1 protein - ap
25	420.5	51.3	157	2	T09659	pathogenesis-relat
26	415.5	50.7	157	2	T09526	stress response ge
27	386	47.1	158	2	T06527	pathogenesis-relat
28	382	46.6	158	2	S42650	pathogenesis-relat
29	381	46.5	158	2	S20518	hypothetical prote
30	374.5	45.7	159	2	T06768	disease resistance
31	371	45.3	158	2	S47140	pathogenesis-relat
32	370	45.2	156	1	SNFB1	pathogenesis-relat
33	367	44.8	155	2	S52664	pathogenesis-relat
34	367	44.8	158	2	S20517	hypothetical prote
35	362.5	44.3	155	1	SNFB2	pathogenesis-rela
36	362.5	44.3	155	2	T11670	pathogenesis relat
37	342.5	41.8	155	2	S35162	STH-21 protein - p
38	342.5	41.8	155	2	S35161	STH-2 protein - po
39	332.5	40.6	157	2	S42649	pathogenesis-relat
40	330.5	40.4	158	2	S12568	pathogenesis-relat
41	317	38.7	178	2	T07403	TSI-1 protein - to
42	316	38.6	155	2	S04552	pathogenesis-relat
43	312	38.1	155	2	S04553	pathogenesis-relat
44	310.5	37.9	154	2	S63984	major allergen Api
45	302	36.9	155	2	T14918	pathogenesis-relat

ALIGNMENTS

RESULT 1
S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 04-Feb-2000
C;Accession: S05376; JC4834; B53288
R;Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; S
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen BetvI, is highly homolog
A;Reference number: S05376; MUID:90005395
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X15877; NID:g17937; PIDN:CAA33887.1; PID:g17938
R;Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O.
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main b
A;Reference number: JC4834; MUID:96254050
A;Accession: JC4834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
R;Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial identic
s) Car b I and oak (Quercus alba) Que a I pollens.
A;Reference number: A53288; MUID:92072607
A;Accession: B53288
A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39,'XX',42-44 <IPS>
A;Cross-references: PID:g239734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBIP:68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 99.5%; Score 815; DB 2; Length 160;
Best Local Similarity 99.4%; Pred. No. 2.2e-64;
Matches 158; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121
```

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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160
```

RESULT 2
G55699
major pollen allergen Bet v 1j - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: G55699; S41902
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: G55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77271; NID:g452739; PIDN:CAA54487.1; PID:g452740
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

Query Match 97.1%; Score 795; DB 2; Length 160;
Best Local Similarity 95.6%; Pred. No. 1.2e-62;
Matches 152; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     62 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||:|||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: D55699; S41899
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77267; NID:g452733; PIDN:CAA54483.1; PID:g452734
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

Query Match 96.5%; Score 790; DB 2; Length 160;
Best Local Similarity 95.0%; Pred. No. 3.4e-62;
Matches 151; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:|||||| ||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     62 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||:|||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
```

RESULT 4
E55699
major pollen allergen Bet v 1f/i - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: E55699; S41905; S41900
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: E55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77268; NID:g452735; PIDN:CAA54484.1; PID:g452736
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberl submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41905
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77274; NID:g452745; PIDN:CAA54490.1; PID:g452746
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

Query Match 96.3%; Score 789; DB 2; Length 160;
Best Local Similarity 95.0%; Pred. No. 4.1e-62;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     62 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||:|||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 5
C55699
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: C55699; S41901; S41898
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid ch
A;Reference number: A55699; MUID:95155322
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77266; NID:g452731; PIDN:CAA54482.1; PID:g452732
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberl

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submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41901
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77270; NID:g452737; PIDN:CAA54486.1; PID:g452738
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match             96.1%;  Score 787;  DB 2;  Length 160;
  Best Local Similarity   95.0%;  Pred. No. 6.2e-62;
  Matches  151;  Conservative    4;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||||||| |||||||||||||||||||||||||:|||
Db       2 GVFNYEIETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   6
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: F55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77269; NID:g452727; PIDN:CAA54485.1; PID:g452728
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match             96.0%;  Score 786;  DB 2;  Length 160;
  Best Local Similarity   94.3%;  Pred. No. 7.5e-62;
  Matches  150;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:|||||||||||||||:|||| |||||||||||||||||||||||:|||
Db       2 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   7
I55699
major pollen allergen Bet v 1l - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: I55699; S41904
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: I55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77273; NID:g452743; PIDN:CAA54489.1; PID:g452744
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1l #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match             95.2%;  Score 780;  DB 2;  Length 160;
  Best Local Similarity   93.7%;  Pred. No. 2.5e-61;
  Matches  149;  Conservative    5;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||| |||||||:|||||||| | |||||||||||||||||||||||:|||
Db       2 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:|||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   8
A57427
major pollen allergen Bet v 1m/n - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A57427; S49450
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: A57427
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: GB:X81972; NID:g807868; PIDN:CAA57497.1; PID:g551640
R;Engel, E.; Kraft, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.
submitted to the EMBL Data Library, October 1994
A;Description: Isoforms of BETV1, the major birch pollen allergen, analyzed by liquid
A;Reference number: S49450
A;Accession: S49450
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <ENG>
A;Cross-references: EMBL:X82028; NID:g807869; PIDN:CAA57550.1; PID:g558561
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1m/n #status experimental <MAT>


  Query Match             90.4%;  Score 740;  DB 2;  Length 160;
  Best Local Similarity   89.3%;  Pred. No. 8e-58;
  Matches  142;  Conservative    8;  Mismatches    9;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:|||||||||||||||||||| |||||||||||||||||||||||:|||
Db       2 GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61
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Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :||||||| |||||||||||||||||||||
Db      62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT   9
A55699
major pollen allergen Bet v 1b - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A55699; S41401
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: A55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77200; NID:g450884; PIDN:CAA54421.1; PID:g450885
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1b #status experimental <MAT>


  Query Match             89.6%;  Score 734;  DB 2;  Length 160;
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  Matches  141;  Conservative    8;  Mismatches   10;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db      2 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| |||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  10
H55699
major pollen allergen Bet v 1k - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: H55699; S41903
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: H55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77272; NID:g458478; PIDN:CAA54488.1; PID:g452742
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>


  Query Match             89.1%;  Score 730;  DB 2;  Length 160;
  Best Local Similarity   88.1%;  Pred. No. 6e-57;
  Matches  140;  Conservative    9;  Mismatches   10;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||:||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db      2 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| |||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  11
B55699
major pollen allergen Bet v 1c - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: B55699; S41897
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: B55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77265; NID:g452729; PIDN:CAA54481.1; PID:g452730
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1c #status experimental <MAT>


  Query Match             88.2%;  Score 722;  DB 2;  Length 160;
  Best Local Similarity   87.4%;  Pred. No. 3e-56;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| |||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||| |:||| :|| || || ||||||||||||||||
Db    122 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  12
S47250
gene 1-Scl protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47250
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47250
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77599; NID:g534909; PIDN:CAA54694.1; PID:g534910
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


  Query Match             86.3%;  Score 707;  DB 2;  Length 160;
  Best Local Similarity   84.9%;  Pred. No. 6.1e-55;
  Matches  135;  Conservative    9;  Mismatches   15;  Indels    0;  Gaps    0;
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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFDYEGETTSVIPAARLFKAFILDGDNLIPKVAPQTVSCVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db     62 GSPFKYVKERVDEVDHVNFKYSYSVIEGGAVGDTLEKICNEIKIVPAPGGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||:||||:|||||  | | ||||||||||||||
Db    122 HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 160


RESULT  13
S47251
gene 1 Sc2 protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47251
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47251
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-159 <SWO>
A;Cross-references: EMBL:X77600; NID:g534899; PIDN:CAA54695.1; PID:g534900
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


  Query Match             85.8%;  Score 703;  DB 2;  Length 159;
  Best Local Similarity   84.9%;  Pred. No. 1.4e-54;
  Matches  135;  Conservative    9;  Mismatches   15;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      1 GVFDYEGETTSVIPAARLFKAFILDGDNLIPKVAPQAVSCVENIEGNGGPGTIKKITFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||:|||||| ||||:||||||| :||||||| ||||||  | ||||||||||
Db     61 GSPFKYVKERVDEVDRVNFKYSYSVIEGGAVGDTLEKICNEIKIVPAPGGGSILKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    121 HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 159


RESULT  14
S30054
major allergen Cor a I/6 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30054
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M.;
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show
A;Reference number: S30053; MUID:93185652
A;Accession: S30054
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X71000; NID:g22689; PIDN:CAA50328.1; PID:g22690
C;Genetics:
A;Gene: Cor a I/6
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.8%;  Score 621;  DB 2;  Length 160;
  Best Local Similarity   73.0%;  Pred. No. 2.1e-47;
  Matches  116;  Conservative   22;  Mismatches   21;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| || |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:|||||:|:|||||  :|| ||||: :|:|||| | |||||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160


RESULT  15
S30055
major allergen Cor a I/11 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30055; S35507
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, sh
A;Reference number: S30053; MUID:93185652
A;Accession: S30055
A;Molecule type: mRNA
A;Residues: 1-160 <BRE1>
A;Cross-references: EMBL:X70997
R;Breiteneder, H.
submitted to the EMBL Data Library, February 1993
A;Reference number: S35507
A;Accession: S35507
A;Molecule type: mRNA
A;Residues: 1-133,'I',135-160 <BRE2>
A;Cross-references: EMBL:X70997; NID:g22683; PIDN:CAA50325.1; PID:g22684
C;Genetics:
A;Gene: Cor a I/1
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.8%;  Score 621;  DB 2;  Length 160;
  Best Local Similarity   73.0%;  Pred. No. 2.1e-47;
  Matches  116;  Conservative   22;  Mismatches   21;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||| :|| ||||: :|:|||| | |||||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160


Search completed: December 11, 2000, 09:58:34
Job time: 1011 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 751.25 Seconds
(without alignments)
19.762 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 297973 seqs, 93374136 residues

Total number of hits satisfying chosen parameters: 297973

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_14:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	814	99.4	160	10	Q96366	Q96366 betula verr
2	812	99.1	160	10	O24642	O24642 betula verr
3	810	98.9	160	10	Q42499	Q42499 betula verr
4	808	98.7	160	10	O23752	O23752 betula verr
5	807	98.5	160	10	Q96371	Q96371 betula verr
6	806	98.4	160	10	Q9SCH8	Q9sch8 betula verr
7	805	98.3	160	10	Q96370	Q96370 betula verr
8	804	98.2	160	10	Q9SCI0	Q9sci0 betula verr
9	804	98.2	160	10	Q9SCH9	Q9sch9 betula verr
10	803	98.0	160	10	Q96365	Q96365 betula verr
11	803	98.0	160	10	Q9SYW1	Q9syw1 betula verr
12	801	97.8	160	10	Q96368	Q96368 betula verr
13	801	97.8	160	10	Q9SCI2	Q9sci2 betula verr
14	800	97.7	160	10	Q9SYW0	Q9syw0 betula verr
15	799	97.6	160	10	Q9SCI3	Q9sci3 betula verr
16	798	97.4	159	10	O23748	O23748 betula verr
17	798	97.4	160	10	Q96367	Q96367 betula verr
18	798	97.4	160	10	O23753	O23753 betula verr
19	796	97.2	160	10	O23754	O23754 betula verr
20	795	97.1	160	10	Q39426	Q39426 betula verr
21	793	96.8	160	10	O23751	O23751 betula verr
22	792	96.7	160	10	Q9SYW2	Q9syw2 betula verr
23	789	96.3	160	10	Q9ZS39	Q9zs39 betula verr
24	788	96.2	160	10	Q9SCH5	Q9sch5 betula verr
25	787	96.1	160	10	Q39431	Q39431 betula verr
26	782	95.5	159	10	O23746	O23746 betula verr
27	775	94.6	160	10	Q9SCH6	Q9sch6 betula verr
28	773	94.4	159	10	O23750	O23750 betula verr
29	751	91.7	160	10	Q9ZS38	Q9zs38 betula verr
30	744	90.8	160	10	Q39429	Q39429 betula verr
31	743	90.7	159	10	O23749	O23749 betula verr
32	741	90.5	160	10	Q39428	Q39428 betula verr
33	740	90.4	159	10	O23747	O23747 betula verr
34	736	89.9	160	10	Q39427	Q39427 betula verr
35	707	86.3	160	10	Q39417	Q39417 betula verr
36	703	85.8	159	10	Q39420	Q39420 betula verr
37	700	85.5	160	10	Q39430	Q39430 betula verr
38	700	85.5	160	10	Q39453	Q39453 corylus ave
39	688	84.0	160	10	Q39425	Q39425 betula verr
40	664	81.1	161	10	Q96382	Q96382 carpinus be
41	644	78.6	161	10	Q96381	Q96381 carpinus be
42	638	77.9	160	10	Q96378	Q96378 carpinus be
43	636	77.7	160	10	Q96377	Q96377 carpinus be
44	627	76.6	160	10	Q96379	Q96379 carpinus be
45	620	75.7	160	10	Q96503	Q96503 carpinus be

ALIGNMENTS

RESULT 1
Q96366
ID Q96366 PRELIMINARY; PRT; 160 AA.
AC Q96366;
DT 01-FEB-1997 (TrEMBLrel. 02, Created)
DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; Z80101; CAB02156.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30889; Betve;1174;30889.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -; 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;

Query Match 99.4%; Score 814; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 9.6e-62;
Matches 157; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121
```

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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   2
O24642
ID   O24642      PRELIMINARY;      PRT;   160 AA.
AC   O24642;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002109; CAA05189.1; -.
DR   EMBL; AJ002107; CAA05187.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 24383; Betve;1174;24383.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17589 MW;  D8A04110BD1CDAC0 CRC64;


  Query Match             99.1%;  Score 812;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 1.4e-61;
  Matches  157;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||:||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   3
Q42499
ID   Q42499      PRELIMINARY;      PRT;   160 AA.
AC   Q42499;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   MAJOR ALLERGEN BET V 1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LEAF;
RA   Hoffmann-Sommergruber K.;
RL   Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., O'Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Betv1 isoforms including a naturally occurring truncated form of
RT   the protein derived from Austrian birch pollen.";
RL   Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z72432; CAA96541.1; -.
DR   EMBL; Z72429; CAA96538.1; -.
DR   EMBL; AJ006907; CAA07322.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30817; Betve;1174;30817.
DR   MENDEL; 36840; Betve;1174;36840.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  E3950410AF8B5096 CRC64;


  Query Match             98.9%;  Score 810;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 2.1e-61;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   4
O23752
ID   O23752      PRELIMINARY;      PRT;   160 AA.
AC   O23752;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002108; CAA05188.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 26841; Betve;1174;26841.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
```

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KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17523 MW;  69BB110BBBDA1ADD CRC64;


  Query Match             98.7%;  Score 808;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 3.1e-61;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||| |||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   5
Q96371
ID   Q96371      PRELIMINARY;      PRT;   160 AA.
AC   Q96371;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80106; CAB02161.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30893; Betve;1174;30893.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17670 MW;  69B4410BBA6A1AC6 CRC64;


  Query Match             98.5%;  Score 807;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 3.7e-61;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||| ||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMRETLLRAVESYLLAHSDAYN 160


RESULT   6
Q9SCH8
ID   Q9SCH8      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH8;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT50.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006911; CAA07326.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17631 MW;  D8A9575C4C393DA0 CRC64;


  Query Match             98.4%;  Score 806;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 4.5e-61;
  Matches  155;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||:|||||||:||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSLIPAARLFRAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||:|||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   7
Q96370
ID   Q96370      PRELIMINARY;      PRT;   160 AA.
AC   Q96370;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80105; CAB02160.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30892; Betve;1174;30892.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  D8AF110BBD1CDADB CRC64;
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  Query Match             98.3%;  Score 805;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 5.5e-61;
  Matches  156;  Conservative    1;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   8
Q9SCI0
ID   Q9SCI0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT37.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006908; CAA07323.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17572 MW;  99A3581E5B3A03FB CRC64;


  Query Match             98.2%;  Score 804;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 6.7e-61;
  Matches  155;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 120
           | |||||||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   9
Q9SCH9
ID   Q9SCH9      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH9;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT45.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006910; CAA07325.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17615 MW;  5A2A67BCCC45CA3E CRC64;


  Query Match             98.2%;  Score 804;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 6.7e-61;
  Matches  155;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||:|||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  10
Q96365
ID   Q96365      PRELIMINARY;      PRT;   160 AA.
AC   Q96365;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80100; CAB02155.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30888; Betve;1174;30888.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17558 MW;  4200581E49B893E9 CRC64;


  Query Match             98.0%;  Score 803;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 8.1e-61;
  Matches  154;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:|||||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  11
Q9SYW1
ID   Q9SYW1      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW1;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B2.
GN   BETV1B2.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124838; AAD26561.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
SQ   SEQUENCE   160 AA;  17565 MW;  E9B5F580BBDA1AC5 CRC64;


  Query Match             98.0%;  Score 803;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 8.1e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGPILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||| ||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYPLAHSDAYN 160


RESULT  12
Q96368
ID   Q96368      PRELIMINARY;      PRT;   160 AA.
AC   Q96368;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80103; CAB02158.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30891; Betve;1174;30891.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17466 MW;  430D72F300B9BBCE CRC64;


  Query Match             97.8%;  Score 801;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 1.2e-60;
  Matches  155;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPG 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |||||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db     62 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:|||||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  13
Q9SCI2
ID   Q9SCI2      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI2;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT10.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R.; Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006904; CAA07319.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17520 MW;  EB3128ED2A630A23 CRC64;


  Query Match             97.8%;  Score 801;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 1.2e-60;
  Matches  155;  Conservative    1;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||| |||||||||||||||||||||||||||||:|||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||| ||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVEGYLLAHSDAYN 160
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RESULT  14
Q9SYW0
ID   Q9SYW0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B1.
GN   BETV1B1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124837; AAD26560.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17530 MW;  4200581E49B88CD4 CRC64;


  Query Match             97.7%;  Score 800;  DB 10;  Length 160;
  Best Local Similarity   96.2%;  Pred. No. 1.5e-60;
  Matches  153;  Conservative    4;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||:||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:||||||||||||||||:|||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLKAVESYLLAHSDAYN 160


RESULT  15
Q9SCI3
ID   Q9SCI3      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI3;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT8.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006903; CAA07318.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17588 MW;  5715581E49A223E9 CRC64;


  Query Match             97.6%;  Score 799;  DB 10;  Length 160;
  Best Local Similarity   96.2%;  Pred. No. 1.8e-60;
  Matches  153;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||:||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVTTPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


Search completed: December 11, 2000, 10:11:10
Job time: 1767 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 10:41:28 ; Search time 10.01 Seconds
(without alignments)
507.465 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 87993 seqs, 31947931 residues

Total number of hits satisfying chosen parameters: 87993

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	810	99.0	159	1	BV1A_BETVE	P15494 betula verr
2	790	96.6	159	1	BV1J_BETVE	P43183 betula verr
3	785	96.0	159	1	BV1E_BETVE	P43178 betula verr
4	784	95.8	159	1	BV1F_BETVE	P43179 betula verr
5	782	95.6	159	1	BV1D_BETVE	P43177 betula verr
6	781	95.5	159	1	BV1G_BETVE	P43180 betula verr
7	775	94.7	159	1	BV1L_BETVE	P43185 betula verr
8	735	89.9	159	1	BV1M_BETVE	P43186 betula verr
9	729	89.1	159	1	BV1B_BETVE	P45431 betula verr
10	725	88.6	159	1	BV1K_BETVE	P43184 betula verr
11	717	87.7	159	1	BV1C_BETVE	P43176 betula verr
12	678	82.9	159	1	MPAG_ALNGL	P38948 alnus gluti
13	635	77.6	159	1	MPA2_CARBE	P38950 carpinus be
14	621	75.9	159	1	MPA1_CARBE	P38949 carpinus be
15	610	74.6	159	1	MPAA_CORAV	Q08407 corylus ave
16	500	61.1	160	1	PRU1_PRUAV	O24248 prunus aviu
17	458.5	56.1	158	1	MAL1_MALDO	P43211 malus domes
18	415.5	50.8	157	1	PR1_MEDSA	Q43560 medicago sa
19	381	46.6	158	1	DRR3_PEA	P14710 pisum sativ
20	377	46.1	158	1	AB18_PEA	Q06930 pisum sativ
21	376	46.0	158	1	SAM2_SOYBN	P26987 glycine max
22	372	45.5	158	1	DRR4_PEA	P27047 pisum sativ
23	369.5	45.2	159	1	DRR1_PEA	P13239 pisum sativ
24	365	44.6	155	1	PR1_PHAVU	P25985 phaseolus v
25	357.5	43.7	155	1	PR2_PHAVU	P25986 phaseolus v
26	344	42.1	156	1	L18B_LUPLU	P52779 lupinus lut
27	337.5	41.3	155	1	PRS1_SOLTU	P17641 solanum tub
28	337.5	41.3	155	1	PRS2_SOLTU	P17642 solanum tub
29	335	41.0	156	1	L18A_LUPLU	P52778 lupinus lut
30	334.5	40.9	158	1	PR2_PETCR	P27538 petroselinu
31	327.5	40.0	157	1	AB17_PEA	Q06931 pisum sativ
32	322	39.4	154	1	RNS1_PANGI	P80889 panax ginse
33	311	38.0	155	1	PR11_PETCR	P19417 petroselinu
34	309.5	37.8	154	1	MPAG_APIGR	P49372 apium grave
35	307.5	37.6	153	1	RNS2_PANGI	P80890 panax ginse
36	307	37.5	155	1	PR13_PETCR	P19418 petroselinu
37	296	36.2	157	1	RAP_TAROF	O49065 taraxacum o
38	277.5	33.9	154	1	DAU1_DAUCA	O04298 daucus caro
39	240	29.3	158	1	PR1_ASPOF	Q05736 asparagus o
40	88	10.8	615	1	DNAK_THETH	Q56235 thermus aqu
41	83	10.1	387	1	YRS8_CAEEL	Q10004 caenorhabdi
42	80.5	9.8	956	1	CB31_YEAST	P32504 saccharomyc
43	79.5	9.7	936	1	ORP1_MOUSE	P56716 mus musculu
44	79	9.7	669	1	DAF1_CAEEL	P20792 caenorhabdi
45	79	9.7	726	1	NU84_YEAST	P52891 saccharomyc

ALIGNMENTS

RESULT 1
BV1A_BETVE
ID BV1A_BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A).
GN BETVIA OR BETVI.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 1-34.
RC TISSUE=POLLEN;
RX MEDLINE; 90005395.
RA Breiteneder H., Pettenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
RN [3]
RP SEQUENCE.
RC TISSUE=POLLEN;
RX MEDLINE; 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL SEQUENCE.
RX MEDLINE; 91317572.
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE; 97102431.
RA Gajhede M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED

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CC   ---------------------------------------------------------------------
DR   EMBL; X15877; CAA33887.1; -.
DR   EMBL; Z80098; CAB02153.1; -.
DR   EMBL; Z80099; CAB02154.1; -.
DR   EMBL; Z80104; CAB02159.1; -.
DR   PIR; S05376; S05376.
DR   PDB; 1BTV; 12-AUG-97.
DR   PDB; 1BV1; 17-SEP-97.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family;
KW   3D-structure.
FT   INIT_MET      0      0
FT   VARIANT      62     62       F -> L.
SQ   SEQUENCE   159 AA;  17440 MW;  96E181194BBA83E6 CRC64;


  Query Match             99.0%;  Score 810;  DB 1;  Length 159;
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  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   2
BV1J_BETVE
ID   BV1J_BETVE     STANDARD;      PRT;   159 AA.
AC   P43183;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-J (BET V I-J).
GN   BETV1J.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77271; CAA54487.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17408 MW;  D2AC26E9E7710A8D CRC64;


  Query Match             96.6%;  Score 790;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 2.8e-62;
  Matches  151;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||| ||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db      61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   3
BV1E_BETVE
ID   BV1E_BETVE     STANDARD;      PRT;   159 AA.
AC   P43178;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-E (BET V I-E).
GN   BETV1E.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77267; CAA54483.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17316 MW;  3E752543EDD1A08E CRC64;


  Query Match             96.0%;  Score 785;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 7.6e-62;
  Matches  150;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||| |||||||||||||||||||||||||||||| ||||||||||||||||
Db       1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |:|||||| |||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db      61 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   4
BV1F_BETVE
ID   BV1F_BETVE     STANDARD;      PRT;   159 AA.
AC   P43179;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V I-F/I).
GN   BETV1F AND BETV1I.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77268; CAA54484.1; -.
DR   EMBL; X77274; CAA54490.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17421 MW;  6063F9C82A71165C CRC64;


  Query Match             95.8%;  Score 784;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 9.2e-62;
  Matches  150;  Conservative    5;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||| | |||||||||||||||||||||||||||||||| ||||||||||||||||
Db       1 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db      61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   5
BV1D_BETVE
ID   BV1D_BETVE     STANDARD;      PRT;   159 AA.
AC   P43177;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-D/H).
GN   BETV1D AND BETV1H.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77266; CAA54482.1; -.
DR   EMBL; X77270; CAA54486.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17418 MW;  8D1F3F8FE56106FD CRC64;


  Query Match             95.6%;  Score 782;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 1.4e-61;
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  Matches  150;  Conservative    4;  Mismatches    5;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||| |||||||||||||||||||||| |||||||||||||| ||||||||||:|||
Db      1 GVFNYEIETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||
Db    121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   6
BV1G_BETVE
ID   BV1G_BETVE     STANDARD;      PRT;   159 AA.
AC   P43180;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-G (BET V I-G).
GN   BETV1G.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77269; CAA54485.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17420 MW;  BBAEE6DCCE241DBB CRC64;


  Query Match             95.5%;  Score 781;  DB 1;  Length 159;
  Best Local Similarity   93.7%;  Pred. No. 1.7e-61;
  Matches  149;  Conservative    6;  Mismatches    4;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          ||||||:||||||||||||||||:|||| |||||||||||||| ||||||||||:|||
Db      1 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
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Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||
Db    121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   7
BV1L_BETVE
ID   BV1L_BETVE     STANDARD;      PRT;   159 AA.
AC   P43185;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-L (BET V I-L).
GN   BETV1L.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------
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CC   ---------------------------------------------------------------------
DR   EMBL; X77273; CAA54489.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17408 MW;  DE85F4ACC647BE0D CRC64;


  Query Match             94.7%;  Score 775;  DB 1;  Length 159;
  Best Local Similarity   93.1%;  Pred. No. 5.6e-61;
  Matches  148;  Conservative    5;  Mismatches    6;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||| |||||||:||||||| | |||||||||||||| ||||||||||:|||
Db      1 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||
Db    121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   8
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BV1M_BETVE
ID   BV1M_BETVE     STANDARD;      PRT;   159 AA.
AC   P43186;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-M/N (BET V I-M/N).
GN   BETV1M AND BETV1N.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X81972; CAA57497.1; -.
DR   EMBL; X82028; CAA57550.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17391 MW;  ABA014F8849985E2 CRC64;


  Query Match             89.9%;  Score 735;  DB 1;  Length 159;
  Best Local Similarity   88.7%;  Pred. No. 1.7e-57;
  Matches  141;  Conservative    8;  Mismatches   10;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
             |||||||:|||||||||||||||||||||||| ||||||||||||| ||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
             | ||||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT   9
BV1B_BETVE
ID   BV1B_BETVE     STANDARD;      PRT;   159 AA.
AC   P45431;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).
GN   BETV1B.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77200; CAA54421.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17406 MW;  ECC8D391E0C96267 CRC64;


  Query Match             89.1%;  Score 729;  DB 1;  Length 159;
  Best Local Similarity   88.1%;  Pred. No. 5.8e-57;
  Matches  140;  Conservative    8;  Mismatches   11;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
             |||||||||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db       1 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
             | ||||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  10
BV1K_BETVE
ID   BV1K_BETVE     STANDARD;      PRT;   159 AA.
AC   P43184;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
GN   BETV1K.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
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RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77272; CAA54488.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17392 MW;  AAF9E6F197C96517 CRC64;


  Query Match             88.6%;  Score 725;  DB 1;  Length 159;
  Best Local Similarity   87.4%;  Pred. No. 1.3e-56;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  11
BV1C_BETVE
ID   BV1C_BETVE     STANDARD;      PRT;   159 AA.
AC   P43176;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-C (BET V I-C).
GN   BETV1C.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77265; CAA54481.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17383 MW;  AAEFA495A7C96517 CRC64;


  Query Match             87.7%;  Score 717;  DB 1;  Length 159;
  Best Local Similarity   86.8%;  Pred. No. 6.4e-56;
  Matches  138;  Conservative    9;  Mismatches   12;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||:|:||:|:|| || || ||||||||||||||||||
Db     121 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  12
MPAG_ALNGL
ID   MPAG_ALNGL     STANDARD;      PRT;   159 AA.
AC   P38948;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN ALN G 1 (ALN G I).
OS   Alnus glutinosa (Alder).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Alnus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93094476.
RA   Breiteneder H., Ferreira F., Reikerstorfer A., Duchene M.,
RA   Valenta R., Hoffmann-Sommergruber K., Ebner C., Breitenbach M.,
RA   Kraft D., Scheiner O.;
RT   "Complementary DNA cloning and expression in Escherichia coli of Aln
RT   g I, the major allergen in pollen of alder (Alnus glutinosa).";
RL   J. Allergy Clin. Immunol. 90:909-917(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------------
DR   EMBL; S50892; AAB24432.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17207 MW;  8DCFB96C680688A6 CRC64;


  Query Match            82.9%;  Score 678;  DB 1;  Length 159;
  Best Local Similarity  80.5%;  Pred. No. 1.6e-52;
  Matches  128;  Conservative   12;  Mismatches   19;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||| || |||||||||||||||| | |||||:|:|||||| ||||||||||:|||
Db      1 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||:
Db     61 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||: |||:|  ||    ||:|||||||||||||
Db    121 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 159


RESULT  13
MPA2_CARBE
ID   MPA2_CARBE     STANDARD;      PRT;   159 AA.
AC   P38950;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM 2 (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293162.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; X66933; CAA47367.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17356 MW;  7D55C78195C1C551 CRC64;


  Query Match            77.6%;  Score 635;  DB 1;  Length 159;
  Best Local Similarity  74.8%;  Pred. No. 9.1e-49;
  Matches  119;  Conservative   20;  Mismatches   20;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||| |||||||||||||||||: | |||:|||:|||||: ||||||||||:| |
Db      1 GVFNYEAETTSVIPAARLFKAFILDGNKLIPKVSPQAVSSVENVEGNGGPGTIKKITFSE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | | ||||:||:|:|||||||||:||||  :|| |||:|:|:|||| | ||||:|||:|:
Db     61 GSPVKYVKERVEEIDHTNFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | || ||| ||::| :||| | ||||||||||||:  ||
Db    121 HAKGYHEVNAEEMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  14
MPA1_CARBE
ID   MPA1_CARBE     STANDARD;      PRT;   159 AA.
AC   P38949;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORMS 1A AND 1B (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293152.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF ISOFORM 1A.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------------
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CC   ---------------------------------------------------------------------------
DR   EMBL; X66932; CAA47366.1; -.
DR   EMBL; X66918; CAA47357.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
FT   VARIANT      37     37       V -> A (IN ISOFORM 1B).
FT   VARIANT      62     62       I -> S (IN ISOFORM 1B).
FT   VARIANT     132    132       K -> E (IN ISOFORM 1B).
SQ   SEQUENCE   159 AA;  17271 MW;  21DCD17A38851E8E CRC64;


  Query Match            75.9%;  Score 621;  DB 1;  Length 159;
  Best Local Similarity  73.0%;  Pred. No. 1.5e-47;
  Matches  116;  Conservative   21;  Mismatches   22;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
```

```
          |||||| || ||||||||||:::|||| | |||||| ||||||: ||||||||| |:| |
Db      1 GVFNYEAETPSVIPAARLFKSYVLDGDKLIPKVAPQVISSVENVGGNGGPGTIKNITFAE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:|||:||:|||||| |||||:|||| :|| |||:|:|:|||| | ||||:|||:|:
Db     61 GIPFKFVKERVDEVDNANFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | || ||| ||::| :||| | ||||||||||||:  ||
Db    121 HAKGYHEVNAEKMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  15
MPAA_CORAV
ID   MPAA_CORAV     STANDARD;      PRT;   159 AA.
AC   Q08407;
DT   01-OCT-1994 (Rel. 30, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN COR A 1, ISOFORMS 5, 6, 11 AND 16 (COR A I).
OS   Corylus avellana (European hazel).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Corylus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93185652.
RA   Breiteneder H., Ferreira F., Hoffmann-Sommergruber K., Ebner C.,
RA   Breitenbach M., Rumpold H., Kraft D., Scheiner O.;
RT   "Four recombinant isoforms of Cor a I, the major allergen of hazel
RT   pollen, show different IgE-binding properties.";
RL   Eur. J. Biochem. 212:355-362(1993).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR. THE COR A I ISOFORMS DISPLAY DIFFERENT ANTIGENIC
CC       AND ALLERGENIC PROPERTIES.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CLONE COR A I/5.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------
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CC   ---------------------------------------------------------------------
DR   EMBL; X70999; CAA50327.1; -.
DR   EMBL; X71000; CAA50328.1; -.
DR   EMBL; X70997; CAA50325.1; -.
DR   EMBL; X70998; CAA50326.1; -.
DR   PIR; S30053; S30053.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0
FT   VARIANT       7      7       V -> A (IN CLONE COR A 1/11).
FT   VARIANT      10     10       P -> T (IN CLONE COR A 1/11).
FT   VARIANT      14     14       P -> S (IN CLONE COR A 1/16).
FT   VARIANT      45     45       E -> G (IN CLONE COR A 1/16).
FT   VARIANT      80     80       T -> K (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     100    100       H -> S (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     113    113       I -> T (IN CLONE COR A 1/16).
FT   VARIANT     133    133       M -> I (IN CLONE COR A 1/11).
SQ   SEQUENCE   159 AA;  17381 MW;  E0F5E2A218E8D768 CRC64;


  Query Match           74.6%;  Score 610;  DB 1;  Length 159;
  Best Local Similarity 71.7%;  Pred. No. 1.4e-46;
  Matches  114;  Conservative   22;  Mismatches   23;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||| || |||||||||||:::|||| | ||||||||:||||: |||||||||  |:| |
Db      1 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db     61 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | ||||: ||::| :||| | ||||||:||||||  ||
Db    121 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 159


Search completed: December 11, 2000, 10:43:18
Job time: 110 sec
```

GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 10:41:14 ; Search time 18.74 Seconds
(without alignments)
792.235 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 297973 seqs, 93374136 residues

Total number of hits satisfying chosen parameters: 297973

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_14:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	809	98.9	160	10	Q96366	Q96366 betula verr
2	807	98.7	160	10	O24642	O24642 betula verr
3	805	98.4	160	10	Q42499	Q42499 betula verr
4	803	98.2	160	10	O23752	O23752 betula verr
5	802	98.0	160	10	Q96371	Q96371 betula verr
6	801	97.9	160	10	Q9SCH8	Q9sch8 betula verr
7	800	97.8	160	10	Q96370	Q96370 betula verr
8	799	97.7	160	10	Q9SCI0	Q9sci0 betula verr
9	799	97.7	160	10	Q9SCH9	Q9sch9 betula verr
10	798	97.6	160	10	Q96365	Q96365 betula verr
11	798	97.6	160	10	Q9SYW1	Q9syw1 betula verr
12	796	97.3	160	10	Q96368	Q96368 betula verr
13	796	97.3	160	10	Q9SCI2	Q9sci2 betula verr
14	795	97.2	160	10	Q9SYW0	Q9syw0 betula verr
15	794	97.1	160	10	Q9SCI3	Q9sci3 betula verr
16	793	96.9	159	10	O23748	O23748 betula verr
17	793	96.9	160	10	Q96367	Q96367 betula verr
18	793	96.9	160	10	O23753	O23753 betula verr
19	791	96.7	160	10	O23754	O23754 betula verr
20	790	96.6	160	10	Q39426	Q39426 betula verr
21	788	96.3	160	10	O23751	O23751 betula verr
22	787	96.2	160	10	Q9SYW2	Q9syw2 betula verr
23	784	95.8	160	10	Q9ZS39	Q9zs39 betula verr
24	783	95.7	160	10	Q9SCH5	Q9sch5 betula verr
25	782	95.6	160	10	Q39431	Q39431 betula verr
26	777	95.0	159	10	O23746	O23746 betula verr
27	770	94.1	160	10	Q9SCH6	Q9sch6 betula verr
28	768	93.9	159	10	O23750	O23750 betula verr
29	746	91.2	160	10	Q9ZS38	Q9zs38 betula verr
30	739	90.3	160	10	Q39429	Q39429 betula verr
31	738	90.2	159	10	O23749	O23749 betula verr
32	736	90.0	160	10	Q39428	Q39428 betula verr
33	735	89.9	159	10	O23747	O23747 betula verr
34	731	89.4	160	10	Q39427	Q39427 betula verr
35	702	85.8	160	10	Q39417	Q39417 betula verr
36	698	85.3	159	10	Q39420	Q39420 betula verr
37	695	85.0	160	10	Q39430	Q39430 betula verr
38	695	85.0	160	10	Q39453	Q39453 corylus ave
39	683	83.5	160	10	Q39425	Q39425 betula verr
40	659	80.6	161	10	Q96382	Q96382 carpinus be
41	640	78.2	160	10	Q96378	Q96378 carpinus be
42	639	78.1	161	10	Q96381	Q96381 carpinus be
43	638	78.0	160	10	Q96377	Q96377 carpinus be
44	629	76.9	160	10	Q96379	Q96379 carpinus be
45	622	76.0	160	10	Q96503	Q96503 carpinus be

ALIGNMENTS

RESULT 1
Q96366
ID Q96366 PRELIMINARY; PRT; 160 AA.
AC Q96366;
DT 01-FEB-1997 (TrEMBLrel. 02, Created)
DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; Z80101; CAB02156.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30889; Betve;1174;30889.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -; 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;

Query Match 98.9%; Score 809; DB 10; Length 160;
Best Local Similarity 98.1%; Pred. No. 8.4e-62;
Matches 156; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||:||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   2
O24642
ID   O24642      PRELIMINARY;      PRT;   160 AA.
AC   O24642;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002109; CAA05189.1; -.
DR   EMBL; AJ002107; CAA05187.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 24383; Betve;1174;24383.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17589 MW;  D8A04110BD1CDAC0 CRC64;


  Query Match           98.7%;  Score 807;  DB 10;  Length 160;
  Best Local Similarity  98.1%;  Pred. No. 1.2e-61;
  Matches  156;  Conservative    1;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||:|||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   3
Q42499
ID   Q42499      PRELIMINARY;      PRT;   160 AA.
AC   Q42499;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   MAJOR ALLERGEN BET V 1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LEAF;
RA   Hoffmann-Sommergruber K.;
RL   Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., O'Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Betv1 isoforms including a naturally occurring truncated form of
RT   the protein derived from Austrian birch pollen.";
RL   Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z72432; CAA96541.1; -.
DR   EMBL; Z72429; CAA96538.1; -.
DR   EMBL; AJ006907; CAA07322.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30817; Betve;1174;30817.
DR   MENDEL; 36840; Betve;1174;36840.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  E3950410AF8B5096 CRC64;


  Query Match           98.4%;  Score 805;  DB 10;  Length 160;
  Best Local Similarity  98.1%;  Pred. No. 1.8e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||| ||||||||||||||||
Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   4
O23752
ID   O23752      PRELIMINARY;      PRT;   160 AA.
AC   O23752;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002108; CAA05188.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 26841; Betve;1174;26841.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
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KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17523 MW;  69BB110BBBDA1ADD CRC64;


  Query Match             98.2%;  Score 803;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 2.7e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||| ||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   5
Q96371
ID   Q96371      PRELIMINARY;      PRT;   160 AA.
AC   Q96371;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80106; CAB02161.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30893; Betve;1174;30893.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17670 MW;  69B4410BBA6A1AC6 CRC64;


  Query Match             98.0%;  Score 802;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 3.3e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||| ||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMRETLLRAVESYLLAHSDAYN 160


RESULT   6
Q9SCH8
ID   Q9SCH8      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH8;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT50.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006911; CAA07326.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17631 MW;  D8A9575C4C393DA0 CRC64;


  Query Match             97.9%;  Score 801;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 4e-61;
  Matches  154;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||:|||||||:|||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSLIPAARLFRAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||:|||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   7
Q96370
ID   Q96370      PRELIMINARY;      PRT;   160 AA.
AC   Q96370;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80105; CAB02160.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30892; Betve;1174;30892.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  D8AF110BBD1CDADB CRC64;
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  Query Match             97.8%;  Score 800;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 4.9e-61;
  Matches  155;  Conservative    1;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||| |||||||||||||| ||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||:||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   8
Q9SCI0
ID   Q9SCI0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT37.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006908; CAA07323.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17572 MW;  99A3581E5B3A03FB CRC64;


  Query Match             97.7%;  Score 799;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 5.9e-61;
  Matches  154;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   9
Q9SCH9
ID   Q9SCH9      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH9;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT45.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006910; CAA07325.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17615 MW;  5A2A67BCCC45CA3E CRC64;


  Query Match             97.7%;  Score 799;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 5.9e-61;
  Matches  154;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||| |||||||||||:|||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||||:||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKALQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  10
Q96365
ID   Q96365      PRELIMINARY;      PRT;   160 AA.
AC   Q96365;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80100; CAB02155.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30888; Betve;1174;30888.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17558 MW;  4200581E49B893E9 CRC64;


  Query Match             97.6%;  Score 798;  DB 10;  Length 160;
  Best Local Similarity   96.2%;  Pred. No. 7.2e-61;
  Matches  153;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
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Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:|||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  11
Q9SYW1
ID   Q9SYW1      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW1;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B2.
GN   BETV1B2.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124838; AAD26561.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
SQ   SEQUENCE   160 AA;  17565 MW;  E9B5F580BBDA1AC5 CRC64;


  Query Match            97.6%;  Score 798;  DB 10;  Length 160;
  Best Local Similarity  97.5%;  Pred. No. 7.2e-61;
  Matches  155;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGPILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||| ||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYPLAHSDAYN 160


RESULT  12
Q96368
ID   Q96368      PRELIMINARY;      PRT;   160 AA.
AC   Q96368;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80103; CAB02158.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30891; Betve;1174;30891.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17466 MW;  430D72F300B9BBCE CRC64;


  Query Match            97.3%;  Score 796;  DB 10;  Length 160;
  Best Local Similarity  96.9%;  Pred. No. 1.1e-60;
  Matches  154;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPG 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db     62 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:|||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  13
Q9SCI2
ID   Q9SCI2      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI2;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT10.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006904; CAA07319.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17520 MW;  EB3128ED2A630A23 CRC64;


  Query Match            97.3%;  Score 796;  DB 10;  Length 160;
  Best Local Similarity  96.9%;  Pred. No. 1.1e-60;
  Matches  154;  Conservative    1;  Mismatches    4;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVEGYLLAHSDAYN 160
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RESULT  14
Q9SYW0
ID   Q9SYW0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B1.
GN   BETV1B1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124837; AAD26560.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17530 MW;  4200581E49B88CD4 CRC64;


  Query Match            97.2%;  Score 795;  DB 10;  Length 160;
  Best Local Similarity  95.6%;  Pred. No. 1.3e-60;
  Matches  152;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||:||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     122 HTKGNHEVKAEQVKASKEMGETLLKAVESYLLAHSDAYN 160


RESULT  15
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ID   Q9SCI3      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI3;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT8.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006903; CAA07318.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17588 MW;  5715581E49A223E9 CRC64;


  Query Match            97.1%;  Score 794;  DB 10;  Length 160;
  Best Local Similarity  95.6%;  Pred. No. 1.6e-60;
  Matches  152;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||:||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVTTPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:||||||||||||||||:|||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


Search completed: December 11, 2000, 10:43:04
Job time: 110 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 11, 2000, 10:38:23 ; Search time 12.26 Seconds
(without alignments)
217.376 Mi[illegible] cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 164575 seqs, 16761186 residues

Total number of hits satisfying chosen parameters: 164575

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
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2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
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4: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	810	99.0	160	1	US-07-847-010-23	Sequence 23, Appl
2	678	82.9	160	1	US-07-847-010-3	Sequence 3, Appli
3	616	75.3	160	1	US-07-847-010-14	Sequence 14, Appl
4	616	75.3	160	1	US-07-847-010-17	Sequence 17, Appl
5	610	74.6	160	1	US-07-847-010-11	Sequence 11, Appl
6	603	73.7	160	1	US-07-847-010-20	Sequence 20, Appl
7	372	45.5	158	5	5312912-2	Patent No. 5312912
8	276.5	33.8	154	1	US-08-363-010-1	Sequence 1, Appli
9	274.5	33.6	154	2	US-08-911-434A-4	Sequence 4, Appli
10	240	29.3	158	3	US-08-199-219-6	Sequence 6, Appli
11	79	9.7	669	2	US-08-357-533A-8	Sequence 8, Appli
12	79	9.7	669	2	US-08-459-009-8	Sequence 8, Appli
13	79	9.7	669	3	US-08-459-951-8	Sequence 8, Appli
14	78	9.5	1442	2	US-08-316-650-12	Sequence 12, Appl
15	78	9.5	1442	4	PCT-US95-02251-12	Sequence 12, Appl
16	75.5	9.2	3135	1	US-08-323-170B-2	Sequence 2, Appli
17	72	8.8	1008	2	US-08-680-326-30	Sequence 30, Appl
18	71.5	8.7	341	2	US-08-538-711A-8	Sequence 8, Appli
19	71.5	8.7	353	2	US-08-538-711A-7	Sequence 7, Appli
20	71.5	8.7	522	5	RE34606-6	Patent No. RE34,60
21	70	8.6	1577	2	US-08-793-824-2	Sequence 2, Appli
22	69.5	8.5	836	1	US-08-426-627-6	Sequence 6, Appli
23	69.5	8.5	837	1	US-08-426-627-23	Sequence 23, Appl
24	69	8.4	436	3	US-08-669-378-2	Sequence 2, Appli
25	69	8.4	436	3	US-08-669-378-4	Sequence 4, Appli
26	69	8.4	436	3	US-08-669-378-6	Sequence 6, Appli
27	69	8.4	436	3	US-08-669-378-10	Sequence 10, Appl
28	69	8.4	436	3	US-08-669-378-12	Sequence 12, Appl
29	69	8.4	997	2	US-08-387-942C-4	Sequence 4, Appli
30	68.5	8.4	769	3	US-09-320-878-12	Sequence 12, Appl
31	67	8.2	780	1	US-08-485-621-2	Sequence 2, Appli
32	67	8.2	780	2	US-08-973-831-2	Sequence 2, Appli
33	67	8.2	780	4	PCT-US96-09530A-2	Sequence 2, Appli
34	67	8.2	983	2	US-08-164-292B-26	Sequence 26, Appl
35	67	8.2	983	3	US-08-845-623-26	Sequence 26, Appl
36	67	8.2	983	3	US-08-815-927-26	Sequence 26, Appl
37	67	8.2	1183	2	US-08-447-031A-2	Sequence 2, Appli
38	66.5	8.1	906	1	US-08-486-270-2	Sequence 2, Appli
39	66.5	8.1	906	3	US-08-367-264-2	Sequence 2, Appli
40	66	8.1	310	1	US-08-129-456A-37	Sequence 37, Appl
41	66	8.1	436	3	US-08-669-378-8	Sequence 8, Appli
42	66	8.1	720	1	US-07-731-157A-2	Sequence 2, Appli
43	66	8.1	720	2	US-08-541-780-2	Sequence 2, Appli
44	66	8.1	1147	3	US-08-470-260-5	Sequence 5, Appli
45	66	8.1	1147	3	US-08-471-491-5	Sequence 5, Appli

ALIGNMENTS

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RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
;   APPLICANT: Breiteneder, Heimo
;   APPLICANT: Reikerstorfer, Arnold
;   APPLICANT: Valenta, Rudolf
;   APPLICANT: Hoffmann - Sommergruber, Karin
;   APPLICANT: Breitenbach, Michael
;   APPLICANT: Kraft, Dietrich
;   APPLICANT: Rumpold, Helmut
;   APPLICANT: Scheiner, Otto
;   APPLICANT: Ebner, Christof
;   APPLICANT: Ferreira, Fatima
;   TITLE OF INVENTION: Allergens of Alder Pollen and
;   TITLE OF INVENTION: Applications Thereof
;   NUMBER OF SEQUENCES: 23
;   CORRESPONDENCE ADDRESS:
;     ADDRESSEE: Pennie & Edmonds
;     STREET: 1155 Avenue of the Americas
;     CITY: New York
;     STATE: New York
;     COUNTRY: U.S.A.
;     ZIP: 10036-2711
;   COMPUTER READABLE FORM:
;     MEDIUM TYPE: Floppy disk
;     COMPUTER: IBM PC compatible
;     OPERATING SYSTEM: PC-DOS/MS-DOS
;     SOFTWARE: PatentIn Release #1.0, Version #1.25
;   CURRENT APPLICATION DATA:
;     APPLICATION NUMBER: US/07/847,010
;     FILING DATE: 01-JUN-1992
;     CLASSIFICATION: 435
;   ATTORNEY/AGENT INFORMATION:
;     NAME: Jones III, Harry C
;     REGISTRATION NUMBER: 20,280
;     REFERENCE/DOCKET NUMBER: 6530-010
;   TELECOMMUNICATION INFORMATION:
;     TELEPHONE: (212) 790-9090
;     TELEFAX: (212) 869-9741/8864
;     TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
;   SEQUENCE CHARACTERISTICS:
;     LENGTH: 160 amino acids
;     TYPE: amino acid
;     TOPOLOGY: linear
;   MOLECULE TYPE: peptide
;   HYPOTHETICAL: NO
;   ORIGINAL SOURCE:
;     ORGANISM: birch (Betula sp.)
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;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-23


  Query Match             99.0%;  Score 810;  DB 1;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 4.9e-82;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   2
US-07-847-010-3
; Sequence 3, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
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US-07-847-010-3


  Query Match             82.9%;  Score 678;  DB 1;  Length 160;
  Best Local Similarity   80.5%;  Pred. No. 1.9e-67;
  Matches  128;  Conservative   12;  Mismatches   19;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Db       2 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||||:
Db      62 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||: |||:|  ||    ||:||||||||||||||
Db     122 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 160


RESULT   3
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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US-07-847-010-14

Query Match 75.3%; Score 616; DB 1; Length 160;
Best Local Similarity 72.3%; Pred. No. 1.3e-60;
Matches 115; Conservative 22; Mismatches 22; Indels 0; Gaps 0;

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Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |  :||||:||||||:|||||:|:|||| :|| ||||: :|:|||| | |||||||||:|:
Db      62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | |||||: ||::| :||| | ||||||:|||||| ||
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
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RESULT 4
US-07-847-010-17
; Sequence 17, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 17:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-17

Query Match 75.3%; Score 616; DB 1; Length 160;
Best Local Similarity 72.3%; Pred. No. 1.3e-60;
Matches 115; Conservative 22; Mismatches 22; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||| |||||||||||||:::|||| | ||||||||:||||: ||||||||| |:| |
Db       2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | |||||||||:|:
Db      62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | |||||: ||::| :||| | ||||||:|||||| ||
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
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RESULT 5
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-11

Query Match 74.6%; Score 610; DB 1; Length 160;
Best Local Similarity 71.7%; Pred. No. 6e-60;
Matches 114; Conservative 22; Mismatches 23; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          ||||||  || |||||||||||:::|||| | ||||||||:||||: |||||||||  |:| |
Db      2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||:::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
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RESULT 6
US-07-847-010-20
; Sequence 20, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 20:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-20

Query Match 73.7%; Score 603; DB 1; Length 160;
Best Local Similarity 71.1%; Pred. No. 3.6e-59;
Matches 113; Conservative 22; Mismatches 24; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          ||||||  || ||| ||||||:::|||| | ||||||||:||||: |||||||||  |:| |
Db      2 GVFNYEVETPSVISAARLFKSYVLDGDKLIPKVAPQAITSVENVGGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:|||||:|:||||  :|| |||: :|:|||| | ||| ||||:|:
Db     62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSTLKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: |!:::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 7
5312912-2
;Patent No. 5312912
; APPLICANT: HADWIGER, LEE A.;CHIANG, CHIN C.;HOROVITZ,
;DANIEL A.
; TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER
;INDUCIBLE TRAITS IN PLANTS
; NUMBER OF SEQUENCES: 9
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/393,301
; FILING DATE: 13-JUN-1989
;SEQ ID NO:2:
; LENGTH: 158
5312912-2

Query Match 45.5%; Score 372; DB 5; Length 158;
Best Local Similarity 49.7%; Pred. No. 1.1e-33;
Matches 79; Conservative 26; Mismatches 52; Indels 2; Gaps 2;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          ||||:| | ||::  | | || : | | | |||   || |:| : ||||||||||::| |
Db      2 GVFNFEEEATSIVAPATLHKALVTDADILTPKVI-DAIKSIEIVEGNGGPGTIKKLTFVE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
              |||  :|: ||  |:  |||:: |  : ||:|||| | |: | |:|||| |:| ||
Db     61 DGETKYVLHKVELVDDANWANNYSIVGGVGLPDTVEKISFEAKLSAGPNGGSIAKLSVKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
             :||||     |::|  |  || : :|:| | :|: | ||
Db    121 YTKGDAIPSEEEIKNGKAKGEGIFKALEGYCVANPD-YN 158
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RESULT 8
US-08-363-010-1
; Sequence 1, Application US/08363010
; Patent No. 5512484
; GENERAL INFORMATION:
; APPLICANT: Yamamoto, Mika
; APPLICANT: Oheda, Kenji
; TITLE OF INVENTION: CARROT 16 KD PROTEIN, GENE CODING FOR
; TITLE OF INVENTION: SAID PROTEIN AND PLASMID CONTAINING SAID GENE
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
; STREET: 8110 Gatehouse Road, Suite 500 East
; CITY: Falls Church
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22042
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

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;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/363,010
;       FILING DATE:  23-DEC-1994
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Svensson, Leonard R.
;       REGISTRATION NUMBER:  30,330
;       REFERENCE/DOCKET NUMBER:  20-3628P
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (703) 205-8000
;       TELEFAX:  (703) 205-8050
;       TELEX:  248345
;   INFORMATION FOR SEQ ID NO:  1:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  154 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     ORIGINAL SOURCE:
;       ORGANISM:  Daucus carota
;       STRAIN:  Kuroda Gosun
US-08-363-010-1


  Query Match             33.8%;  Score 276.5;  DB 1;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 3.9e-23;
  Matches   57;  Conservative   32;  Mismatches   64;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |  ::  | || : | ::|   :|| | : || || |  ||: : |:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  | | |:     |: :||:|  : : :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLEFIESIETHMVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT  9
US-08-911-434A-4
; Sequence 4, Application US/08911434A
; Patent No. 5959176
;  GENERAL INFORMATION:
;    APPLICANT:  TORIKAI, Satomi
;    APPLICANT:  OEDA, Kenji
;    TITLE OF INVENTION:  PLANT PROMOTER AND UTILIZATION THEREOF
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BIRCH, STEWART, KOLASCH & BIRCH, LLP
;      STREET:  P.O. BOX 747
;      CITY:  FALLS CHURCH
;      STATE:  VIRGINIA
;      COUNTRY:  UNITED STATES OF AMERICA
;      ZIP:  22040
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/911,434A
;      FILING DATE:  12-AUG-1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Stewart, Raymond C.
;      REGISTRATION NUMBER:  21,066
;      REFERENCE/DOCKET NUMBER:  2185-0199P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703)205-8000
;      TELEFAX:  (703)205-8050
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;     LENGTH: 154 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-911-434A-4


  Query Match             33.6%;  Score 274.5;  DB 2;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 6.4e-23;
  Matches   57;  Conservative   31;  Mismatches   65;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |  ::  | || : | ::|   :|| | : || || |  ||: : |:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  | | |:     |: :||:|  :   :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLGFIESIETHLVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT  10
US-08-199-219-6
; Sequence 6, Application US/08199219
; Patent No. 6031151
; Patent No. 6031151 5698768
;  GENERAL INFORMATION:
;    APPLICANT:  DRAPER, JOHN
;    TITLE OF INVENTION:  CALLUS-SPECIFIC PROMOTERS
;    NUMBER OF SEQUENCES:  8
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  HALE AND DORR
;      STREET:  1455 PENNSYLVANIA AVENUE, N.W.
;      CITY:  WASHINGTON
;      STATE:  D.C.
;      ZIP:  20004
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/199,219
;      FILING DATE:  01 MARCH 1994
;    PRIOR APPLICATION DATA:
;    PRIOR APPLICATION DATA:  APPLICATION NUMBER:  PCT/GB92/01602
;    PRIOR APPLICATION DATA:  FILING DATE:  02 SEPTEMBER 1992
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  158 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-199-219-6


  Query Match             29.3%;  Score 240;  DB 3;  Length 158;
  Best Local Similarity   36.5%;  Pred. No. 4.3e-19;
  Matches   57;  Conservative   30;  Mismatches   65;  Indels    4;  Gaps    3;

Qy       4 NYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE-GL 62
           ::  |    : | |:||| :||  || ||: |  |:    :||:|  |||::|      :
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Db      5 SWSHEVAVNVAAGRMFKAAMLDWHNLGPKIVPDFIAGGSVVSGDGSVGTIREIKINNPAI 64

Qy     63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKYHT 122
          || |||:|:| |||  |:   :::||| :|   |  :   |   : :|| ::|::  |
Db     65 PFSYVKERLDFVDHDKFEVKQTLVEGGGLGKMFECATTHFKFEPSSNGGCLVKVTASY-- 122

Qy    123 KGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAY 158
          |    |  |  || ||     ::| |:||||:  ||
Db    123 KILPGVADESAKA-KEGITNHMKATEAYLLANPTAY 157


RESULT  11
US-08-357-533A-8
; Sequence 8, Application US/08357533A
; Patent No. 5831050
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/357,533A
;      FILING DATE:  16-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-357-533A-8


  Query Match             9.7%;  Score 79;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 2.2;
  Matches   39;  Conservative   25;  Mismatches   53;  Indels   42;  Gaps    9;

Qy      8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
          || : :|   :       ||   :  |:|||  |  |::   :||         ||| |:
Db    216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy     63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db    260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy    120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
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          :||:  :|  ||    : |          |: :| |
Db    309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  12
US-08-459-009-8
; Sequence 8, Application US/08459009
; Patent No. 5861479
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,009
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/357,533
;      FILING DATE:  16-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-009-8


  Query Match             9.7%;  Score 79;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 2.2;
  Matches   39;  Conservative   25;  Mismatches   53;  Indels   42;  Gaps    9;

Qy      8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
          || : :|   :       ||   :  |:|||  |  |::   :||         ||| |:
Db    216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy     63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db    260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy    120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
          :||:  :|  ||    : |          |: :| |
Db    309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344
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RESULT  13
US-08-459-951-8
; Sequence 8, Application US/08459951
; Patent No. 6093547
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,951
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/357,533
;      FILING DATE:  16-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-951-8


  Query Match             9.7%;  Score 79;  DB 3;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 2.2;
  Matches   39;  Conservative   25;  Mismatches   53;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
           || : :|   :       ||   :  |:|||  |  |::   :||         ||| |:
Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDLVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :| ||    : |         |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  14
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
;  GENERAL INFORMATION:
;    APPLICANT:  Bonadio, Jeffrey
;    APPLICANT:  Roessler, Blake J.
;    APPLICANT:  Goldstein, Steven A.
;    APPLICANT:  Lin, Wushan
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS
;    TITLE OF INVENTION:  FOR STIMULATING BONE CELLS
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  30-SEP-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC:008
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-316-650-12


  Query Match             9.5%;  Score 78;  DB 2;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 8.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

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           || |  |                | |         |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
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Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
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Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


RESULT  15
PCT-US95-02251-12
; Sequence 12, Application PC/TUS9502251
;  GENERAL INFORMATION:
;    APPLICANT:
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS FOR STIMULATING BONE
;    TITLE OF INVENTION:  CELLS
;    NUMBER OF SEQUENCES:  18
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
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;       CITY:  Houston
;       STATE:  Texas
;       COUNTRY:  United States of America
;       ZIP:  77210
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS/ASCII
;       SOFTWARE:  PatentIn Release #1.0, Version
;       SOFTWARE:  #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  PCT/US95/02251
;       FILING DATE:  CONCURRENTLY HEREWITH
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/316,650
;       FILING DATE:  30-SEP-1994
;       CLASSIFICATION:
;       APPLICATION NUMBER:  US 08/199,780
;       FILING DATE:  18-FEB-1994
;       CLASSIFICATION:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Parker, David L.
;       REGISTRATION NUMBER:  32,165
;       REFERENCE/DOCKET NUMBER:  UMIC009P--
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (512) 418-3000
;       TELEFAX:  (713) 789-2679
;       TELEX:  79-0924
;   INFORMATION FOR SEQ ID NO:  12:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  1442 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
PCT-US95-02251-12


  Query Match             9.5%;  Score 78;  DB 4;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 8.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENISGNGGPGTIKKISFPEGL------ 62
           || |  |                  | |          |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
             | :|:  | || | |  :::  |        ||: ::|:|: : :|||
Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
            ||: :    ||: :   |        |  : | |||
Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


Search completed: December 11, 2000, 10:41:41
Job time: 198 sec
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